



STIC Search Report

EIC 1700

STIC Database Tracking Number: 190403

TO: Greg Delcotto
Location: REM 9A39
Art Unit : 1751
May 24, 2006

Case Serial Number: 10/531906

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Search Notes



STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- I am an examiner in Workgroup: Example: 1713
- Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability)
- ☐ Results were not useful in determining patentability or understanding the invention

Comments:



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Bib Data Sheet

CONFIRMATION NO. 3917

SERIAL NUMBER	FILING OR 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/531,906	04/18/2005	502	1754	HS/15-22771/A/PCT
RULE				
APPLICANTS Gunther Schlingloff, Riehen, SWITZERLAND; Torsten Wieprecht, Schopfheim, GERMANY; Uwe Heinz, Saarlouis, GERMANY; Albert Schneider, Grenzach-Wyhlen, GERMANY; Marie-Josée Dubs, Wittersdorf, FRANCE; Frank Bachmann, Freiburg, GERMANY; Menno Hazenkamp, Riehen, SWITZERLAND; Thomas Ehlis, Freiburg, GERMANY; Cornelia Vincenzi, Schopfheim, GERMANY; Josef Dannacher, Basel, SWITZERLAND;				
** CONTINUING DATA ***** AD This application is a 371 of PCT/EP03/11636 10/21/2003				
** FOREIGN APPLICATIONS ***** AD EUROPEAN PATENT OFFICE (EPO) 02405929.7 10/30/2002				
Foreign Priority claimed <input checked="" type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met <u>Adapted</u> Verified and Acknowledged <u>Adapted</u> Examiner's Signature Initials		STATE OR COUNTRY SWITZERLAND	SHEETS DRAWING 34	TOTAL CLAIMS 34
INDEPENDENT CLAIMS 1				
ADDRESS 324				
TITLE Use of metal complex compounds as oxidation catalysts				
FILING FEE RECEIVED 3010	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

Access DB# 190403

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: GREG DELCOTTO Examiner #: 72268 Date: 5/16/06
Art Unit: 1731 Phone Number 30571-7721312 Serial Number: 10/531906
Mail Box and Bldg/Room Location: 9A39 Results Format Preferred (circle) PAPER DISK E-MAIL
RAMSEY

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: USE OF METAL COMPLEX COMPOUNDS AS OXIDATION CATALYSTSInventors (please provide full names): SEE ATTACHED BIB SHEETSEarliest Priority Filing Date: 10/30/02

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

* SEE ATTACHED CLAIMSSCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr.

MAY 18 REC'D

Pat. & T.M. Office

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>Lisha</u>	NA Sequence (#) _____	STN <u>431.73</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>1</u>	Questel/Orbit _____
Date Searcher Picked Up: <u>5/24/06</u>	Bibliographic _____	Dr.Link _____
Date Completed: <u>5/24/06</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>40</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: <u>30</u>	Patent Family _____	WWW/Internet _____
Online Time: <u>60</u>	Other _____	Other (specify) _____

GROUP I, 1-24

W/ TRAVERSE

1. (currently amended): Use, as a catalyst for a method of catalyzing an oxidation-reactions reaction, which comprises contacting an oxidizable substrate with an oxidizing agent in the presence of a catalytically effective amount of at least one metal complex compound of formula (1)



wherein

Me is manganese, titanium, iron, cobalt, nickel or copper,

X is a coordinating or bridging radical,

n and m are each independently of the other an integer having a value of from 1 to 8,

p is an integer having a value of from 0 to 32,

z is the charge of the metal complex,

Y is a counter-ion,

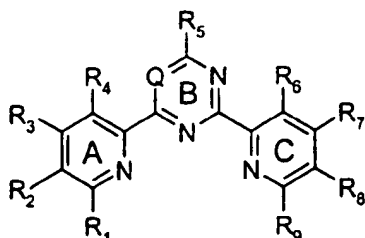
q = z/(charge of Y), and

L is a ligand of formula (2)

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4 GROUNDS



(2),

wherein

Q is N or CR₁₀,

R₁, R₂, R₃, R₄, (R₅), R₆, R₇, R₈, R₉ and R₁₀ are each independently of the others hydrogen;

unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl; cyano; halogen; nitro;

-COOR₁₁ or -SO₃R₁₁ wherein

R₁₁ is in each case hydrogen, a cation or unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

R₁₂ is in each case hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or

substituted aryl; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N⁺R₁₃R₁₄R₁₅; -(C₁-C₆alkylene)-N⁺R₁₃R₁₄R₁₅;

-N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; -N(R₁₂)-(C₁-C₆alkylene)-N⁺R₁₃R₁₄R₁₅;

-N[(C₁-C₆alkylene)-N⁺R₁₃R₁₄R₁₅]₂; -N(R₁₂)-N-R₁₃R₁₄ or -N(R₁₂)-N⁺R₁₃R₁₄R₁₅, wherein

R₁₂ is as defined above and

R_{13} , R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or unsubstituted or substituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms.

2. (currently amended): ~~Use A method~~ according to claim 1, wherein Me is manganese in the oxidation state II, III, IV or V.

3. (cancelled).

4. (currently amended): ~~Use A method~~ according to ~~any one of claims claim 1, 2 and 3,~~ wherein X is CH_3CN , H_2O , F^- , Cl^- , Br^- , HOO^- , O_2^{2-} , O^{2-} , $R_{16}COO^-$, $R_{16}O^-$, $LMeO^-$ or $LMeOO^-$, wherein R_{16} is hydrogen, $-SO_3C_1$ - C_4 alkyl or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl, and L and Me are as defined in claim 1.

5. (currently amended): ~~Use A method~~ according to ~~any one of claims 1 to 4~~ claim 1, wherein Y is $R_{17}COO^-$, ClO_4^- , BF_4^- , PF_6^- , $R_{17}SO_3^-$, $R_{17}SO_4^-$, SO_4^{2-} , NO_3^- , F^- , Cl^- , Br^- , I^- , citrate, tartrate or oxalate, wherein

R_{17} is hydrogen or unsubstituted or ~~substituted~~ substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl.

6. (currently amended): ~~Use A method~~ according to ~~any one of claims 1 to 5~~ claim 1, wherein n is an integer having a value of from 1 to 4, ~~especially 1 or 2.~~

7. (currently amended): ~~Use A method~~ according to ~~any one of claims 1 to 6~~ claim 1, wherein m is an integer having a value of 1 or 2, ~~especially 1.~~

8. (currently amended): ~~Use A method~~ according to ~~any one of claims 1 to 7~~ claim 1, wherein p is an integer having a value of from 0 to 4, ~~especially 2.~~

9. (currently amended): ~~Use A method~~ according to ~~any one of claims 1 to 8~~ claim 1, wherein z is an integer having a value of from 8- to 8+.

10. (currently amended): ~~Use A method according to any one of claims 1 to 9~~ claim 1, wherein aryl is phenyl or naphthyl each unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, cyano, nitro, carboxy, sulfo, hydroxy, amino, N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthyloxy.

11. (currently amended): ~~Use A method according to any one of claims 1 to 10~~ claim 1, wherein the 5-, 6- or 7-membered ring formed by R₁₃ and R₁₄ together with the nitrogen atom linking them is an unsubstituted or C₁-C₄alkyl-substituted pyrrolidine, piperidine, piperazine, morpholine or azepane ring wherein the nitrogen atoms may be quaternised.

12. (currently amended): ~~Use A method according to any one of claims 1 to 11~~ claim 1, wherein R₅ is C₁-C₁₂alkyl; phenyl unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, cyano, nitro, carboxy, sulfo, hydroxy, amino, N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthyloxy; cyano; halogen; nitro; -COOR₁₁ or -SO₃R₁₁ wherein

R₁₁ is in each case hydrogen, a cation, C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

R₁₂ is in each case hydrogen, C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N[⊕]R₁₃R₁₄R₁₅; -(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅;

-N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N(R₁₂)-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-N-R₁₃R₁₄ or -N(R₁₂)-N[⊕]R₁₃R₁₄R₁₅, wherein

R₁₂ may have one of the above meanings and

R₁₃, R₁₄ and R₁₅ are each independently of the other(s) hydrogen, unsubstituted or hydroxy-substituted C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring unsubstituted or substituted by at least one unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl, wherein the nitrogen atom may be quaternised, and R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉ and R₁₀ may be as defined in claim 1 or are hydrogen.

13. (currently amended): ~~Use A method according to any one of claims 1 to 12~~ claim 1, wherein R₅ is phenyl unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, phenyl or by hydroxy; cyano; nitro; -COOR₁₁ or -SO₃R₁₁ wherein

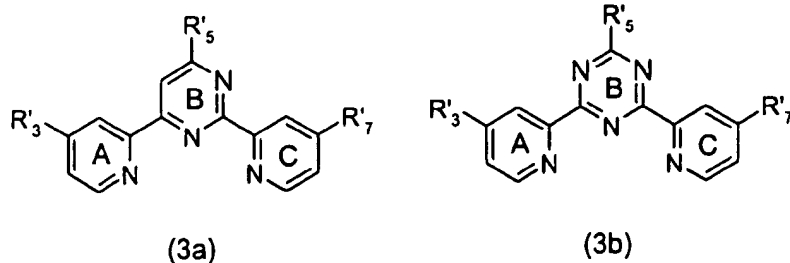
R₁₁ is in each case hydrogen, a cation, C₁-C₄alkyl or phenyl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein R₁₂ is in each case hydrogen, C₁-C₄alkyl or phenyl; -N(CH₃)-NH₂ or -NH-NH₂; amino; N-mono- or

N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety; or an unsubstituted or C₁-C₄alkyl-substituted pyrrolidine, piperidine, piperazine, morpholine or azepane ring.

14. (currently amended): ~~Use A method according to any one of claims 1 to 13~~ claim 1, wherein R₅ in L is C₁-C₄alkoxy; hydroxy; hydrazine; amino; N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety; or an unsubstituted or C₁-C₄alkyl-substituted pyrrolidine, piperidine, piperazine, morpholine or azepane ring.

15. (currently amended): ~~Use A method according to any one of claims 1 to 14~~ claim 12, wherein R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉ and R₁₀ in L have the definitions given for R₅ in ~~any one of claims 12 to 14~~ claim 12, but those radicals may additionally be hydrogen.

16. (currently amended): ~~Use A method according to any one of claims 1 to 15~~ claim 1, wherein L is a compound of formula (3a) and/or (3b)



wherein R₃, R₅ and R₇ have the definitions given in ~~claims 1 to 15~~ claim 1 for R₃, R₅ and R₇.

17. (currently amended): ~~Use A method according to any one of claims 1 to 14~~ claim 1, which comprises the use, as a catalyst for oxidation reactions, of at least one metal complex compound of formula (1')



wherein

Me is manganese, titanium, iron, cobalt, nickel or copper,

X is a coordinating or bridging radical,

n and m are each independently of the other an integer having a value of from 1 to 8,

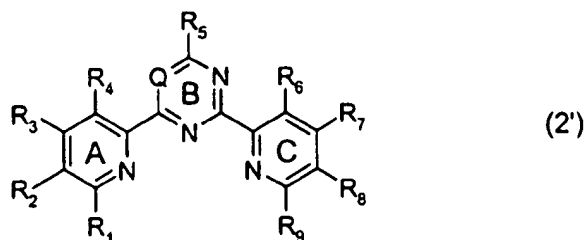
p is an integer having a value of from 0 to 32,

z is the charge of the metal complex,

Y is a counter-ion,

q = z/(charge of Y), and

L' is a ligand of formula (2')



wherein

Q is N or CR₁₀,

R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉ and R₁₀ are each independently of the others hydrogen; unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl; cyano; halogen; nitro; -COOR₁₁ or -SO₃R₁₁ wherein

R₁₁ is in each case hydrogen, a cation or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

R₁₂ is in each case hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N[⊕]R₁₃R₁₄R₁₅;

-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; -N(R₁₂)-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N[(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅]₂; -N(R₁₂)-N-R₁₃R₁₄ or -N(R₁₂)-N[⊕]R₁₃R₁₄R₁₅, wherein

R₁₂ is as defined above and

R₁₃, R₁₄ and R₁₅ are each independently of the other(s) hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or unsubstituted or substituted aryl, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

with the proviso that

at least one of the substituents R₁ to R₁₀ contains a quaternised nitrogen atom that is not bonded directly to one of the three rings A, B and/or C.

18. (currently amended): ~~Use A method~~ according to claim 17, wherein R₅ is not hydrogen.

19. (currently amended): ~~Use A method~~ according to ~~either~~ claim 17 ~~or claim 18~~, wherein

R₅ in L' is phenyl unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, phenyl or by hydroxy; cyano; nitro; -COOR₁₁ or -SO₃R₁₁ wherein

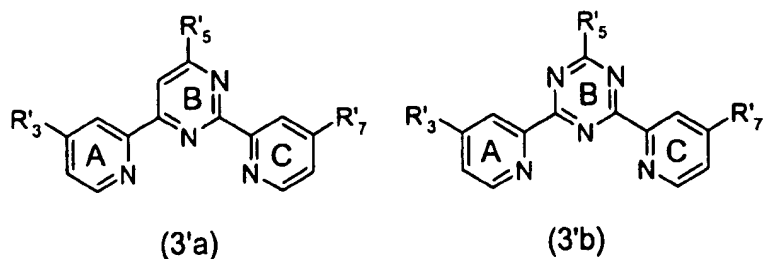
R₁₁ is in each case hydrogen, a cation, C₁-C₄alkyl or phenyl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein R₁₂ is in each case hydrogen, C₁-C₄alkyl or phenyl; -N(CH₃)-NH₂ or -NH-NH₂; amino; N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, wherein the nitrogen atoms, ~~especially the nitrogen atoms not bonded to one of the three rings A, B or C,~~ may be quaternised; N-mono- or N,N-di-C₁-C₄alkyl-N⁺R₁₃R₁₄R₁₅ unsubstituted or substituted by hydroxy in the alkyl moiety, wherein

R₁₃, R₁₄ and R₁₅ are each independently of the others hydrogen or unsubstituted or hydroxy-substituted C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring unsubstituted or substituted by at least one C₁-C₄alkyl ~~or by at least one~~ unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl, wherein the nitrogen atom may be quaternised; N-mono- or N,N-di-C₁-C₄alkyl-NR₁₃R₁₄ unsubstituted or substituted by hydroxy in the alkyl moiety, wherein

R₁₃ and R₁₄ may be as defined above.

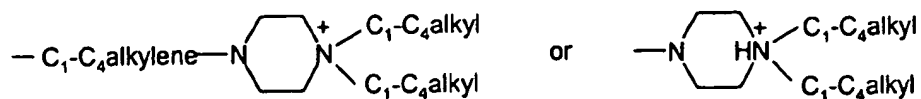
20. (currently amended): ~~Use A method according to any one of claims 17 to 19~~ claim 17, wherein L' is a compound of formula (3'a) and/or (3'b)



wherein R₃, R₅ and R₇ have the definitions ~~and preferred meanings indicated above in claim 17~~ for R₅, but R₃ and R₇ may additionally be hydrogen.

21. (currently amended): ~~Use A method according to any one of claims 17 to 20~~ claim 17, wherein

- (i) at least one of the substituents R₃, R₅ and R₇ is one of the radicals



wherein the unbranched or branched alkylene group may be unsubstituted or substituted, and wherein the alkyl groups, which are unbranched or branched independently of one another, may be unsubstituted or substituted and wherein the piperazine ring may be unsubstituted or substituted.

22. (cancelled).

23. (currently amended): ~~Use A method according to any one of claims 17 to 22~~ claim 17, wherein L' contains precisely 1, 2 or precisely 3 quaternised nitrogen atoms.

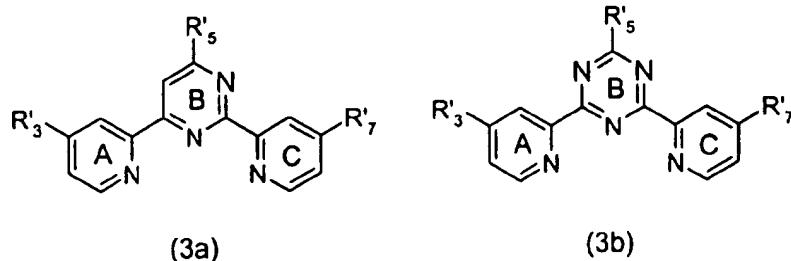
24. (currently amended): ~~Use A method according to any one of claims 1 to 23~~, wherein the oxidation is carried out using molecular oxygen and/or air.

25. (currently amended): A metal complex compound of formula (1a)



wherein all substituents are as defined in ~~any one of claims 1 to 16~~ claim 1.

26. (currently amended): A metal complex compound of formula (1a) according to claim 25, wherein L is a compound of formula (3a) and/or (3b)



wherein

R'₅ is C₁-C₄alkoxy; hydroxy; N-mono- or N,N-di-C₁-C₄alkylamino substituted by hydroxy in the alkyl moiety; or -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; or -N(R₁₂)-N-R₁₃R₁₄, wherein

R₁₂ is hydrogen; C₁-C₁₂alkyl or unsubstituted phenyl or phenyl substituted by (substituted in the alkyl moiety by hydroxy) N-mono- or N,N-di-C₁-C₄alkylamino-, N-phenylamino-, N-naphthylamino-, phenyl-, phenoxy- or naphthyloxy, and R₁₃ and R₁₄ are each independently of the other hydrogen, unsubstituted or hydroxy-substituted C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring that is unsubstituted or substituted by at least one unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl, ~~especially a pyrrolidine, piperidine, piperazine, morpholine or azepane ring,~~ and

R'₃ and R'₇ are each independently of the other hydrogen; C₁-C₄alkoxy; hydroxy; N-mono- or N,N-di-C₁-C₄alkylamino substituted by hydroxy in the alkyl moiety; or -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; or -N(R₁₂)-N-R₁₃R₁₄, wherein

R₁₂ is hydrogen; C₁-C₁₂alkyl or unsubstituted or (substituted in the alkyl moiety by hydroxy) N-mono- or N,N-di-C₁-C₄alkylamino-, N-phenylamino-, N-naphthylamino-, phenyl-, phenoxy- or naphthyloxy-substituted phenyl, and

R₁₃ and R₁₄ are each independently of the other hydrogen; unsubstituted or hydroxy-substituted C₁-C₁₂alkyl, unsubstituted phenyl or phenyl substituted as indicated above, or

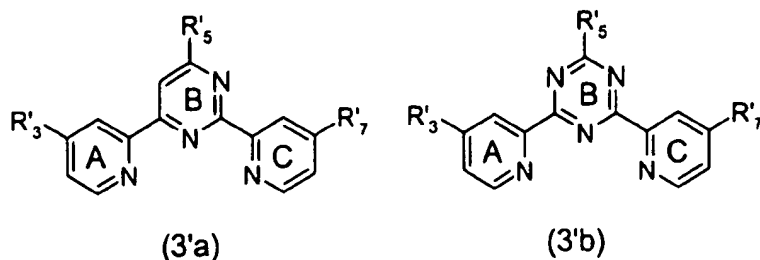
R₁₃ and R₁₄, together with the nitrogen atom linking them, form a pyrrolidine, piperidine, piperazine, morpholine or azepane ring that is unsubstituted or substituted by at least one unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl, ~~especially a pyrrolidine, piperidine, piperazine, morpholine or azepane ring.~~

27. (currently amended): A metal complex compound of formula (1'a)



wherein all substituents are as defined in ~~claims~~ claim 17 ~~to~~ 23.

28. (currently amended): A metal complex compound of formula (1'a) according to claim 27, wherein L' is a compound of formula (3'a) and/or (3'b)



wherein R₃, R₅ and R₇ have the definitions and preferred meanings given above for R₅ in ~~claims 17 to 23~~, but R₃ and R₇ may additionally be hydrogen, with the proviso that

- (i) at least one of the substituents R₃, R₅ and R₇ is a radical $-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$; $-N(R_{12})-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$; $-N[(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}]_2$; or $-N(R_{12})-N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R₁₂ is as defined above and

R₁₃, R₁₄ and R₁₅ are each independently of the others hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms; or

$-NR_{13}R_{14}$; $-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$; $-N(R_{12})-(C_1-C_8\text{alkylene})-NR_{13}R_{14}$;

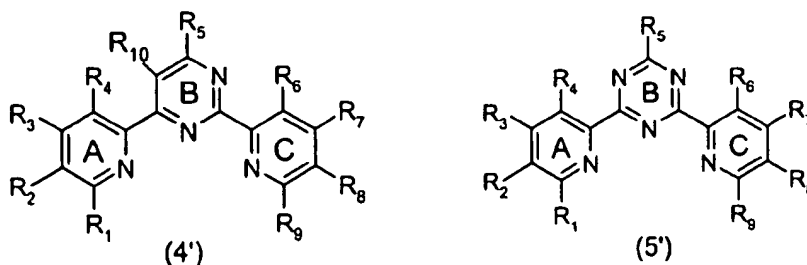
$-N[(C_1-C_6\text{alkylene})-NR_{13}R_{14}]_2$; or $-N(R_{12})-N-R_{13}R_{14}$, wherein

R₁₂ and R₁₅ are as defined above and R₁₃ and R₁₄, together with the nitrogen atom linking them, form a 5-, 6- or 7-membered ring which may be unsubstituted or substituted by at least one

unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl and may contain further hetero atoms,

wherein at least one nitrogen atom not bonded to one of the rings A, B and/or C is quaternised.

29. (currently amended): A ligand L' according to ~~any one of claims 17 to 23, claim 27 and 28~~ of formula (4') or (5')



wherein

$R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9$ and R_{10} are each independently of the others hydrogen; unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; cyano; halogen; nitro; $-COOR_{11}$ or $-SO_3R_{11}$ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-SR_{12}$, $-SO_2R_{12}$ or $-OR_{12}$ wherein

R_{12} is in each case hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-NR_{13}R_{14}$; $-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$;

$-N^{\oplus}R_{13}R_{14}R_{15}$; $-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$; $-N(R_{12})-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$;

$-N[(C_1-C_6\text{alkylene})-NR_{13}R_{14}]_2$; $-N(R_{12})-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$;

$-N[(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}]_2$; $-N(R_{12})-N-R_{13}R_{14}$ or $-N(R_{12})-N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R_{12} is as defined above and

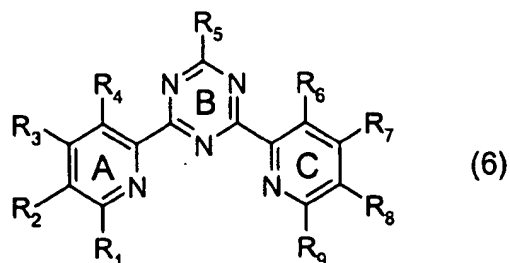
R_{13}, R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

with the proviso that

at least one of the substituents R_1 to R_{10} contains a quaternised nitrogen atom that is not bonded directly to one of the three rings A, B and/or C.

30. (currently amended): A ligand L according to ~~any one of claims 1 to 16, 25 and 26~~ claim 1 of formula (6)



wherein

$R_1, R_2, R_4, R_5, R_6, R_7, R_8$ and R_9 are each independently of the others hydrogen; unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; cyano; halogen; nitro; $-COOR_{11}$ or $-SO_3R_{11}$ wherein

R₁₁ is in each case hydrogen, a cation or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

R₁₂ is in each case hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N[⊕]R₁₃R₁₄R₁₅; -(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; -N(R₁₂)-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N[(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅]₂; -N(R₁₂)-N-R₁₃R₁₄; or -N(R₁₂)-N[⊕]R₁₃R₁₄R₁₅, wherein

R₁₂ is as defined above and

R₁₃, R₁₄ and R₁₅ are each independently of the other(s) hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

and

R₃ is phenyl substituted by C₁-C₄alkyl, C₁-C₄alkoxy, hydroxy, sulfo, sulfato, halogen, cyano, nitro, carboxy, amino, N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthyloxy, substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -CH₃; C₃-C₁₈alkyl; cyano; halogen; nitro; -COOR₁₁ or -SO₃R₁₁ wherein

R₁₁ is in each case hydrogen, a cation or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -SR₁₂, -SO₂R₁₂ or -OR₁₂ wherein

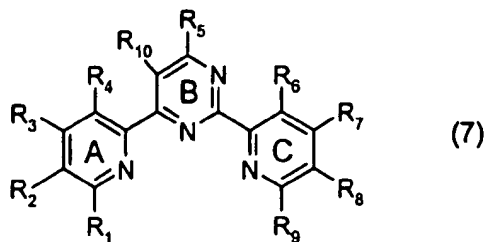
R₁₂ is in each case hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl; -NR₁₃R₁₄; -(C₁-C₆alkylene)-NR₁₃R₁₄; -N[⊕]R₁₃R₁₄R₁₅; -(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N(R₁₂)-(C₁-C₆alkylene)-NR₁₃R₁₄; -N[(C₁-C₆alkylene)-NR₁₃R₁₄]₂; -N(R₁₂)-(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅; -N[(C₁-C₆alkylene)-N[⊕]R₁₃R₁₄R₁₅]₂; -N(R₁₂)-N-R₁₃R₁₄; or -N(R₁₂)-N[⊕]R₁₃R₁₄R₁₅, wherein

R₁₂ is as defined above and

R₁₃, R₁₄ and R₁₅ are each independently of the other(s) hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or substituted or unsubstituted aryl, or

R₁₃ and R₁₄, together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms.

31. (currently amended): A ligand L according to ~~any one of claims 1 to 16, 25 and 26~~ claim 1 of formula (7)



wherein

$R_1, R_2, R_3, R_4, R_5, R_6, R_8, R_9$ and R_{10} are each independently of the others hydrogen; unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; cyano; halogen; nitro; $-COOR_{11}$ or $-SO_3R_{11}$ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-SR_{12}$, $-SO_2R_{12}$ or $-OR_{12}$ wherein

R_{12} is in each case hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or unsubstituted or substituted ~~substituted or unsubstituted~~ aryl; $-NR_{13}R_{14}$; $-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$;

$-N^{\oplus}R_{13}R_{14}R_{15}$; $-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$; $-N(R_{12})-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$;

$-N[(C_1-C_6\text{alkylene})-NR_{13}R_{14}]_2$; $-N(R_{12})-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$;

$-N[(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}]_2$; $-N(R_{12})-N-R_{13}R_{14}$ or $-N(R_{12})-N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R_{12} is as defined above and

R_{13} , R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms,

and

R_7 is phenyl substituted by C_1 - C_4 alkyl, C_1 - C_4 alkoxy, hydroxy, sulfo, sulfato, halogen, cyano, nitro, carboxy, amino, N-mono- or N,N-di- C_1 - C_4 alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, phenyl, phenoxy or by naphthyloxy, substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-CH_3$; C_3 - C_{18} alkyl; cyano; F; Br; I; nitro; $-COOR_{11}$ or $-SO_3R_{11}$ wherein

R_{11} is in each case hydrogen, a cation or unsubstituted or substituted C_1 - C_{18} alkyl or substituted or unsubstituted aryl; $-SR_{12}$, $-SO_2R_{12}$ or $-OR_{12}$ wherein

R_{12} is in each case hydrogen or unsubstituted or substituted C_1 - C_{18} alkyl or unsubstituted or substituted aryl; $-NR_{13}R_{14}$; $-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$; $-N^{\oplus}R_{13}R_{14}R_{15}$;

$-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$; $-N(R_{12})-(C_1-C_6\text{alkylene})-NR_{13}R_{14}$;

$-N[(C_1-C_6\text{alkylene})-NR_{13}R_{14}]_2$; $-N(R_{12})-(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}$;

$-N[(C_1-C_6\text{alkylene})-N^{\oplus}R_{13}R_{14}R_{15}]_2$; $-N(R_{12})-N-R_{13}R_{14}$; or $-N(R_{12})-N^{\oplus}R_{13}R_{14}R_{15}$, wherein

R_{12} is as defined above and

R_{13} , R_{14} and R_{15} are each independently of the other(s) hydrogen or unsubstituted or substituted C_1-C_{18} alkyl or substituted or unsubstituted aryl, or

R_{13} and R_{14} , together with the nitrogen atom linking them, form an unsubstituted or substituted 5-, 6- or 7-membered ring which may contain further hetero atoms.

32. (currently amended): A detergent, cleaning, disinfecting or bleaching composition containing

- I) from 0 to 50% A) of an anionic surfactant and/or B) of a non-ionic surfactant,
- II) from 0 to 70% C) of a builder substance,
- III) from 1 to 99% D) of a peroxide,
- IV) E) at least one metal complex compound of formula (1) ~~and/or (1')~~ of any one of claims of claim 25 to 28 in an amount that, in the liquor, gives a concentration of from 0.5 to 50 mg/litre of liquor, ~~preferably from 1 to 30 mg/litre of liquor~~, when from 0.5 to 20 g/litre of the detergent, cleaning, disinfecting or bleaching agent are added to the liquor, the percentages in each case being percentages by weight, based on the total weight of the composition, and
- V) water ad 100%.

33. (currently amended): A solid formulation containing

- a) from 1 to 99% by weight of a metal complex compound of formula (1) ~~and/or (1')~~ of any one of claims of claim 25 to 28,
- b) from 1 to 99% by weight of a binder,
- c) from 0 to 20% by weight of an encapsulating material,
- d) from 0 to 20% by weight of a further additive and
- e) from 0 to 20% by weight of water.

34. (original): A solid formulation according to claim 33, which is in the form of tablets or granules.

=> fil reg

FILE 'REGISTRY' ENTERED AT 12:17:09 ON 24 MAY 2006

=> d his

FILE 'HCAPLUS' ENTERED AT 11:25:43 ON 24 MAY 2006

L1 1 S US20060052265/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 11:25:59 ON 24 MAY 2006

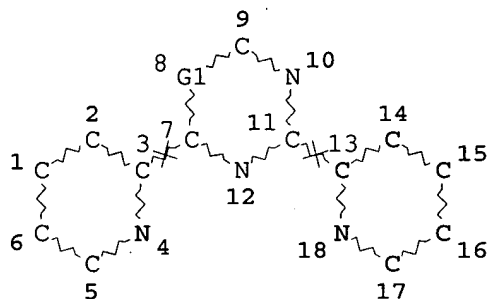
L2 31 S E1-E31
L3 STR
L4 6 S L3
L5 SCR 1991 OR 1966 OR 1965 OR 1920
L6 17 S L3 AND L5
L7 466 S L3 AND L5 FUL
L8 2 S L7 AND L2
SAV L7 DEL906/A

FILE 'HCAPLUS' ENTERED AT 11:44:59 ON 24 MAY 2006

L9 107 S L7
L10 12 S L9 AND CATALY?
L11 4 S L9 AND DETERG?/SC,SX
L12 25 S L9 AND OXIDAT?
L13 34 S L10-L12
L14 1 S L13 AND L1
L15 9 S L9 AND CAT/RL
L16 35 S L13 OR L15

=> d que 116

L3 STR



M 19

VAR G1=C/N

NODE ATTRIBUTES:

NSPEC IS RC AT 19

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 19

STEREO ATTRIBUTES: NONE

L5 SCR 1991 OR 1966 OR 1965 OR 1920

L7 466 SEA FILE=REGISTRY SSS FUL L3 AND L5

L9 107 SEA FILE=HCAPLUS ABB=ON PLU=ON L7

L10 12 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND CATALY?

L11 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND DETERG?/SC,SX
L12 25 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND OXIDAT?
L13 34 SEA FILE=HCAPLUS ABB=ON PLU=ON (L10 OR L11 OR L12)
L15 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND CAT/RL
L16 35 SEA FILE=HCAPLUS ABB=ON PLU=ON L13 OR L15

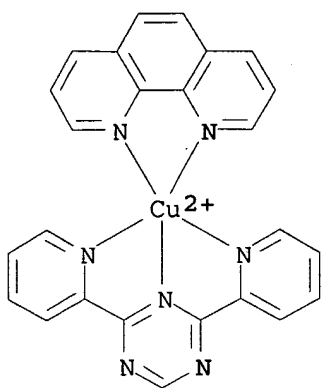
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L16 ANSWER 1 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1317796 HCAPLUS
DOCUMENT NUMBER: 144:224855
TITLE: Synthesis, characterization and biological
activity of ternary copper(II) complexes
containing polypyridyl ligands
AUTHOR(S): Patel, R. N.; Singh, Nripendra; Shukla, K. K.;
Gundla, V. L. N.; Chauhan, U. K.
CORPORATE SOURCE: Department of Chemistry, School of Environment
Biology, A.P.S. University, Rewa, MP, 486003,
India
SOURCE: Spectrochimica Acta, Part A: Molecular and
Biomolecular Spectroscopy (2006), 63A(1),
21-26
CODEN: SAMCAS; ISSN: 1386-1425
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Ternary Cu(II) complexes involving polypyridyl ligands in the
coordination sphere [Cu(tpy)(phen)](ClO4)2 (1),
[Cu(tpy)(bipy)](ClO4)2 (2), [Cu(tptz)(phen)](ClO4)2 (3) and
[Cu(tptz)(bipy)](BF4)2 (4) where tpy = 2,2':6',2''-terpyridine,
tptz = 2,4,6-tri(2-pyridyl)-1,3,5-triazine, phen =
1,10-phenanthroline and bipy = 2,2'-bipyridine were synthesized
and characterized by elemental anal., magnetic susceptibility,
X-band EPR spectroscopy and electronic spectroscopy. Single
crystal x-ray of (1) revealed a distorted square pyramidal
geometry in the complex. Magnetic susceptibility measurements at
room temperature were at 1.77-1.81 μ B. SOD and antimicrobial
activities of these complexes were also measured. Crystal data of
1: P.hivin.1, a 9.3010(7), b 9.7900(6), c 16.4620(6) Å, Vc =
1342.73(14) Å³, Z = 4. The bond distance of Cu-N in square
base is 2 ± 0.04 Å.
IT 875557-32-7P 875557-34-9P
(preparation, SOD activity and antifungal and antibacterial
activities of)
RN 875557-32-7 HCAPLUS
CN INDEX NAME NOT YET ASSIGNED

CM 1

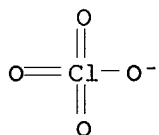
CRN 875557-31-6
CMF C25 H17 Cu N7
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



RN 875557-34-9 HCAPLUS

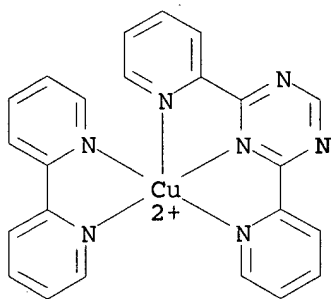
CN INDEX NAME NOT YET ASSIGNED

CM 1

CRN 875557-33-8

CMF C23 H17 Cu N7

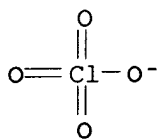
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 7, 10, 75
 IT 9054-89-1, Superoxide dismutase
 (copper polypyridyl ternary complexes as mimic for
 catalysis of dismutation of superoxide)
 IT 25970-70-1P 875557-32-7P 875557-34-9P
 (preparation, SOD activity and antifungal and antibacterial
 activities of)
 REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L16 ANSWER 2 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2005:1200315 HCAPLUS
 DOCUMENT NUMBER: 143:462161
 TITLE: Use of metal complexes having
 bispyridylpyrimidine or bispyridyltriazine
 ligands as catalysts for reactions
 with peroxy compounds for bleaching colored
 stains on hard surfaces
 INVENTOR(S): Wieprecht, Torsten; Dubs, Marie-Josee;
 Schlingloff, Gunther
 PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.
 SOURCE: PCT Int. Appl., 95 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005105303	A1	20051110	WO 2005-EP51732	2005 0420

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
 MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,
 PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM,
 TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,
 LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: EP 2004-101821 A

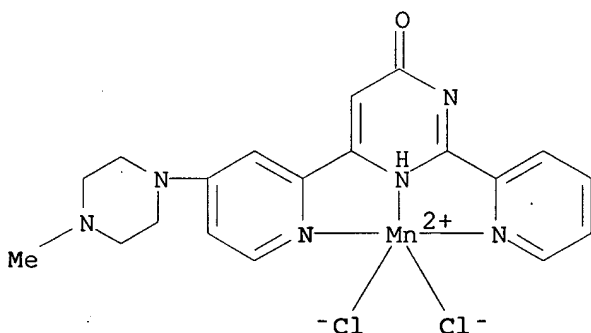
2004
0429

AB The present invention relates to the use of certain manganese complexes having bispyridylpyrimidine or bispyridyltriazine ligands or mixts. of such ligands as **catalysts** for reactions with peroxy compds. for bleaching colored stains on hard surfaces, especially dishes in automatic dishwashers. The invention relates also to cleaning formulations for hard surfaces comprising such **catalysts**. Thus, 0.130 mol DMF and 4.06 mol thionyl chloride were stirred, 0.812 mol picolinic acid was added therein and heated at 70° for 24 h, 114 mol of the resulting 4-chloropyridine-2-carboxylic acid Et ester was reacted with 100 mmol sodium hydride and 114 mmol Et acetate, stirred for 12 h at room temperature to give 14.5 g 3-(4-chloropyrid-2-yl)-3-oxopropionic acid Et ester, 12.3 mol of which was reacted with 303 mmol 1-methylpiperazine, refluxed for 22 h to give 6-[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol, 2.5 mmol of which was reacted with 2.5 mmol manganese chloride tetrahydrate to give a metal complex, showing good bleaching effect on tea-stained cup when formulated (20 µM) with 44 mM hydrogen peroxide.

IT **860469-44-9P**, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol manganese dichloride complex
860469-45-0P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol methyl iodide manganese dichloride complex
869111-82-0P, 2,6-Di(2-pyridyl)-4-pyridiminol manganese dichloride complex
869111-83-1P, 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol manganese dichloride complex
869111-84-2P, 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol di(methyl iodide) manganese dichloride complex
 (catalyst; production of metal complexes having bispyridylpyrimidine or bispyridyltriazine ligands as **catalysts** for bleaching colored stains on hard surfaces)

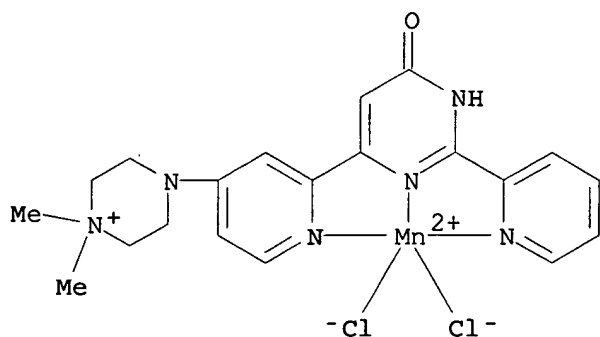
RN 860469-44-9 HCAPLUS

CN Manganese, dichloro[6-[4-(4-methyl-1-piperazinyl)-2-pyridinyl-κN]-2-(2-pyridinyl-κN)-4(1H)-pyrimidinone-κN1]- (9CI) (CA INDEX NAME)



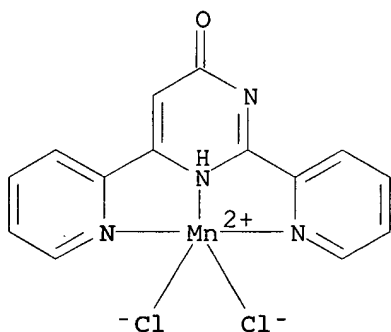
RN 860469-45-0 HCAPLUS

CN Manganese(1+), dichloro[4-[2-[1,6-dihydro-6-oxo-2-(2-pyridinyl-κN)-4-pyrimidinyl-κN3]-4-pyridinyl-κN]-1,1-dimethylpiperazinium]-, iodide (9CI) (CA INDEX NAME)



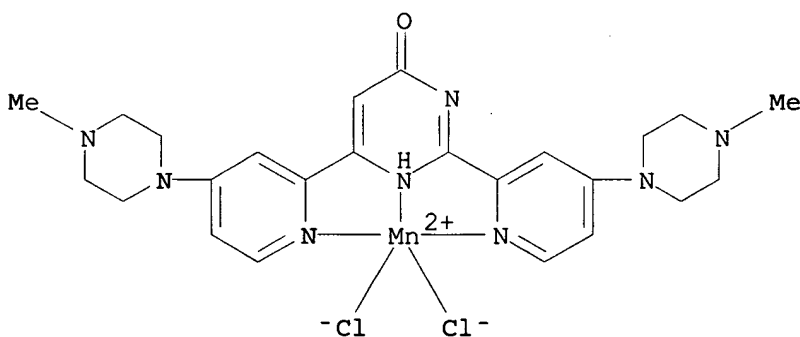
RN 869111-82-0 HCAPLUS

CN Manganese, dichloro[2,6-di(2-pyridinyl-κN)-4(1H)-pyrimidinone-κN1]- (9CI) (CA INDEX NAME)



RN 869111-83-1 HCAPLUS

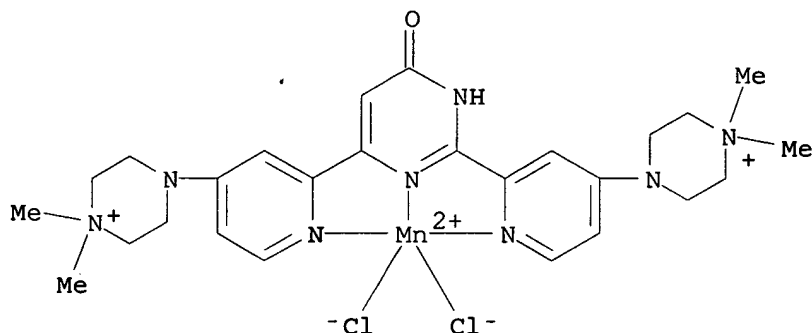
CN Manganese, [2,6-bis[4-(4-methyl-1-piperazinyl)-2-pyridinyl-κN]-4(1H)-pyrimidinone-κN1]dichloro- (9CI) (CA INDEX NAME)



RN 869111-84-2 HCAPLUS

CN Manganese(2+), dichloro[4,4'-[(1,6-dihydro-6-oxo-2,4-

pyrimidinediyl-κN3)di(2,4-pyridinediyl-κN)]bis[1,1-dimethylpiperazinium]]-, diiodide (9CI) (CA INDEX NAME)



●2 I⁻

- IC ICM B01J031-18
ICS C07F013-00; C07D401-14; C11D003-395; C11D003-39; C11D011-00; C11D011-02; C11D017-00; C11D017-06; C07D239-00; C07D213-00
- CC 46-6 (Surface Active Agents and Detergents)
Section cross-reference(s): 27, 67
- ST metal complex bispyridylpyrimidine bispyridyltriazine ligand; **catalyst** reaction peroxy compd bleaching colored stain hard surface; DMF picolinic acid ethyl acetate methylpiperazine reactant ligand; manganese methylpiperazinylpyridylpyridylpyrimidinol complex **catalyst** prepn
- IT Detergents
(bleaching; production of metal complexes having bispyridylpyrimidine or bispyridyltriazine ligands as **catalysts** for bleaching colored stains on hard surfaces)
- IT Coordination compounds
(**catalyst**; production of metal complexes having bispyridylpyrimidine or bispyridyltriazine ligands as **catalysts** for bleaching colored stains on hard surfaces)
- IT Detergents
(dishwashing; production of metal complexes having bispyridylpyrimidine or bispyridyltriazine ligands as **catalysts** for bleaching colored stains on hard surfaces)
- IT Detergents
(production of metal complexes having bispyridylpyrimidine or bispyridyltriazine ligands as **catalysts** for bleaching colored stains on hard surfaces)
- IT Ligands
(production of metal complexes having bispyridylpyrimidine or bispyridyltriazine ligands as **catalysts** for bleaching colored stains on hard surfaces)
- IT 860469-44-9P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol manganese dichloride complex
860469-45-0P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol methyl iodide manganese dichloride complex 869111-82-0P, 2,6-Di(2-pyridyl)-4-pyridiminol

- manganese dichloride complex 869111-83-1P,
2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol
manganese dichloride complex 869111-84-2P,
2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-pyrimidin-4-ol
di(methyl iodide) manganese dichloride complex
(**catalyst**; production of metal complexes having
bispyridylpyrimidine or bispyridyltriazine ligands as
catalysts for bleaching colored stains on hard
surfaces)
- IT 19235-89-3P, 4-Chloro-2-cyanopyridine 64064-56-8P,
4-Chloropyridine-2-carboxylic acid ethyl ester 99586-65-9P,
4-Chloropicolinamide 688753-54-0P, 3-(4-Chloropyrid-2-yl)-3-
oxopropionic acid ethyl ester 688753-55-1P, 6-(4-Chloropyrid-2-
yl)-2-pyrid-2-yl-pyrimidin-4-ol 688753-58-4P
(intermediate in ligand preparation; production of metal complexes
having bispyridylpyrimidine or bispyridyltriazine ligands as
catalysts for bleaching colored stains on hard
surfaces)
- IT 75239-97-3P, 4,6-Dipyrid-2-yl-[1,3,5]triazin-2-ylamine
688753-56-2P, 6-[4-(4-Methyl-piperazin-1-yl)-pyrid-2-yl]-2-pyrid-2-
yl-pyrimidin-4-ol 688753-57-3P, 6-[4-(4-Methyl-piperazin-1-yl)-
pyrid-2-yl]-2-pyrid-2-yl-pyrimidin-4-ol methyl iodide
688753-59-5P, 2,6-Bis(4-chloropyrid-2-yl)-pyrimidin-4-ol
688753-60-8P, 2,6-Bis[4-(4-methyl-piperazin-1-yl)-pyrid-2-yl]-
pyrimidin-4-ol 688753-61-9P, 2,6-Bis[4-(4-methyl-piperazin-1-yl)-
pyrid-2-yl]-pyrimidin-4-ol di(methyl iodide) 688753-62-0P,
4,6-Dipyrid-2-yl-[1,3,5]triazin-2-ol
(ligand; production of metal complexes having bispyridylpyrimidine
or bispyridyltriazine ligands as **catalysts** for
bleaching colored stains on hard surfaces)
- IT 10239-68-6, 2,6-Di(2-pyridyl)-4-pyridiminol
(ligand; production of metal complexes having bispyridylpyrimidine
or bispyridyltriazine ligands as **catalysts** for
bleaching colored stains on hard surfaces)
- IT 13446-34-9, Manganese chloride tetrahydrate
(reactant in **catalyst** preparation; production of metal
complexes having bispyridylpyrimidine or bispyridyltriazine
ligands as **catalysts** for bleaching colored stains on
hard surfaces)
- IT 50-01-1, Guanidine hydrochloride 57-13-6, Urea, reactions
64-17-5, Ethanol, reactions 68-12-2, DMF, reactions 74-88-4,
Methyl iodide, reactions 98-98-6, Picolinic acid 100-70-9,
2-Cyanopyridine 109-01-3, 1-Methyl-piperazine 141-78-6, Ethyl
acetate, reactions 7719-09-7, Thionyl chloride 51285-26-8,
2-Amidinopyridine hydrochloride
(reactant in ligand preparation; production of metal complexes having
bispyridylpyrimidine or bispyridyltriazine ligands as
catalysts for bleaching colored stains on hard
surfaces)
- REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 3 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:673179 HCAPLUS

DOCUMENT NUMBER: 143:175164

TITLE: Metal complex compounds and their use as
catalysts for oxidations
with peroxy acids and/or precursors of organic
peroxy acid and hydrogen peroxide

INVENTOR(S): Wieprecht, Torsten; Heinz, Uwe; Xia, Juntao;
 PATENT ASSIGNEE(S): Schlingloff, Gunther; Dubs, Marie-Josee
 SOURCE: Ciba Specialty Chemicals Holding Inc., Switz.
 PCT Int. Appl., 88 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005068074	A2	20050728	WO 2005-EP50000	20050103

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,
 LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: EP 2004-100078 A
 20040112

OTHER SOURCE(S): MARPAT 143:175164

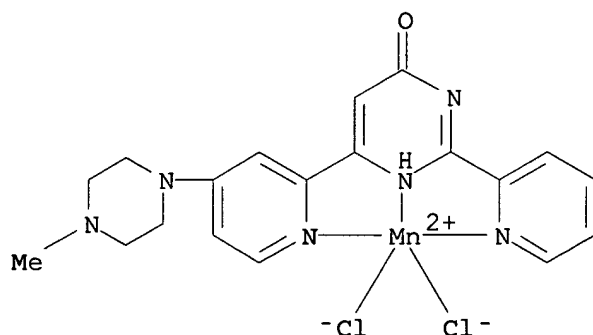
AB The invention accordingly relates to the use as **catalysts** of at least one metal complex [LnMemXp]zYq (I), wherein all substituents have the meanings as defined in the claims for **oxidation** reactions with organic peroxy acids and/or precursors of organic peroxy acid and H2O2, as well as to detergent compns. In I, Me is manganese; titanium; iron; cobalt; nickel or copper, X is a coordinating or bridging radical, n and m are 1 to 8, p is 0 to 32, z is the charge of the metal complex, Y is a counter-ion, q = z/(charge of Y), and 15 L is a tricyclic compound ligand. A manganese(II) complex with 1,1-dimethyl-4-(4'-oxo-1',4'-dihydro-[2,2';6',2"]terpyrid-4-yl)-piperazin-1-ium methosulfate was prepared and used as a **catalyst** for stain-removing bleaching with peracetic acid.

IT 860469-44-9P 860469-45-0P

(metal complex compds. and their use as **catalysts** for **oxidns.** with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

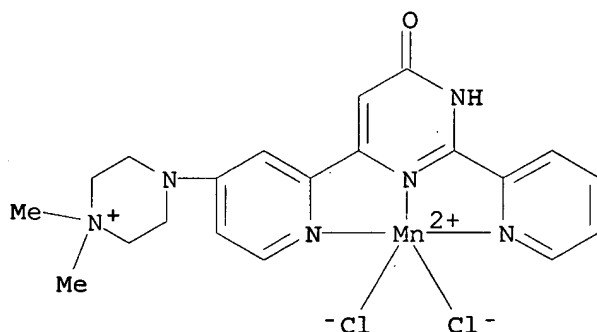
RN 860469-44-9 HCAPLUS

CN Manganese, dichloro[6-[4-(4-methyl-1-piperazinyl)-2-pyridinyl-κN]-2-(2-pyridinyl-κN)-4(1H)-pyrimidinone-κN1]-
 (9CI) (CA INDEX NAME)



RN 860469-45-0 HCAPLUS

CN Manganese(1+), dichloro[4-[2-[1,6-dihydro-6-oxo-2-(2-pyridinyl-κN)-4-pyrimidinyl-κN3]-4-pyridinyl-κN]-1,1-dimethylpiperazinium]-, iodide (9CI) (CA INDEX NAME)



● I⁻

IC ICM B01J031-18

ICS B01J031-04; C07F013-00; C07D213-22; C07D401-14; C11D003-395; D06L003-02; D06M011-50; D21C009-10; A61L002-18; A61L012-12; C07B033-00; C07D301-14

CC 46-4 (Surface Active Agents and Detergents)

Section cross-reference(s): 78

ST metal complex catalyst oxidn peroxy acid
hydrogen peroxide

IT Bleaching

Cleaning

Detergents

Disinfectants

Oxidation catalysts

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

IT Coordination compounds

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

IT 474491-21-9P 688741-04-0P 688741-05-1P 688741-07-3P

860469-42-7P 860469-43-8P 860469-44-9P
860469-45-0P

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

IT 109-01-3P, 1-Methyl-piperazine 19235-89-3P, 4-Chloro-2-cyanopyridine 40614-52-6P, 1-Pyrid-2-yl-butane-1,3-dione 64064-56-8P, 4-Chloro-pyridine-2-carboxylic acid ethyl ester 75239-97-3P 648431-07-6P 648431-08-7P 648431-09-8P 648431-11-2P 648431-12-3P 648431-17-8P 648431-18-9P 648431-19-0P 648431-20-3P 648431-21-4P 648431-23-6P 688753-55-1P 688753-56-2P 688753-57-3P 688753-58-4P 688753-59-5P 688753-60-8P 688753-61-9P 688753-62-0P

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

IT 50-01-1, Guanidine hydrochloride 57-13-6, Urea, reactions 98-98-6, Picolinic acid 100-70-9, 2-Cyanopyridine 142-25-6, N,N,N'-Trimethyl-ethane-1,2-diamine 2524-52-9 13446-34-9, Manganese(II) chloride tetrahydrate 51285-26-8, 2-Amidinopyridine hydrochloride

(metal complex compds. and their use as catalysts for oxidns. with peroxy acids and/or precursors of organic peroxy acid and hydrogen peroxide)

L16 ANSWER 4 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:439786 HCAPLUS

DOCUMENT NUMBER: 143:305849

TITLE: Reactions of 2,4,6-tripyridyl-1,3,5-s-triazine and its Fe(II) complex with OH• and eaq-

AUTHOR(S): Hela, Pamidipati Gayatri; Reddy, Ramireddy Nageswara; Anipindi, Nageswara Rao; Priyadarsini, K. Indira; Mukherji, Tulsi

CORPORATE SOURCE: Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan

SOURCE: Reaction Kinetics and Catalysis Letters (2005), 85(1), 79-87

CODEN: RKCLAU; ISSN: 0133-1736

PUBLISHER: Akademiai Kiado

DOCUMENT TYPE: Journal

LANGUAGE: English

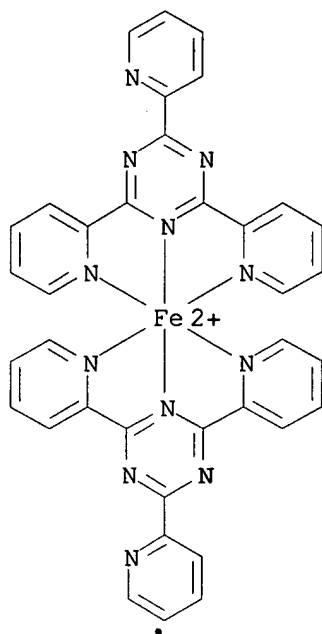
AB Pulse radiolysis studies indicated that OH• and eaq- formed adducts with 2,4,6-tripyridyl-1,3,5-s-triazine (tptz). The OH-adduct showed an absorption maximum at 290 nm, while the adduct formed from the attack of eaq- and subsequent protonation of the anion, has an absorption maximum at 300 nm. In case of the complex, Fe(tptz)22+, both OH• and eaq- gave ligand centered adducts. All the adducts decayed by second order dimerization or disproportionation, a disproportionation reaction in case of the complex.

IT 22452-38-6

(absorption spectroscopy on reactions of 2,4,6-tripyridyl-1,3,5-s-triazine and Fe(II) complex with oh• and eaq-)

RN 22452-38-6 HCAPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 22-9 (Physical Organic Chemistry)
Section cross-reference(s): 73, 74

IT **Oxidation**
Reduction

UV and visible spectra

(absorption spectroscopy on reactions of 2,4,6-tripyridyl-1,3,5-s-triazine and Fe(II) complex with oh• and eaq-)

IT 3352-57-6, Hydroxy, reactions 3682-35-7 22452-38-6

(absorption spectroscopy on reactions of 2,4,6-tripyridyl-1,3,5-s-triazine and Fe(II) complex with oh• and eaq-)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 5 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:364179 HCAPLUS

DOCUMENT NUMBER: 143:317716

TITLE: CoII complexes of triazine-based tridentate
ligands with positive and attractive CoII/III
redox couples

AUTHOR(S): Medlycott, Elaine A.; Theobald, Isabelle;
Hanan, Garry S.

CORPORATE SOURCE: Departement de Chimie, Universite de Montreal,
Montreal, QC, H3T 1J4, Can.

SOURCE: European Journal of Inorganic Chemistry
(2005), (7), 1223-1226

CODEN: EJICFO; ISSN: 1434-1948

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

AB CoII complexes based on the triazine ligand 2,4-di(2'-pyridyl)-6-(p-R-C6H4)-1,3,5-triazine were synthesized and characterized. Cyclic voltammetry shows that the CoII/III redox couple is more pos. than previously described Co complexes of tridentate ligands. The CoII/III redox couple may be varied depending on the nature of

the substituent on the Ph ring of the triazine ligand.

IT 864653-14-5P 864653-16-7P

(preparation and electrochem. redox and conversion to cobalt chloro triazine derivative complex)

RN 864653-14-5 HCAPLUS

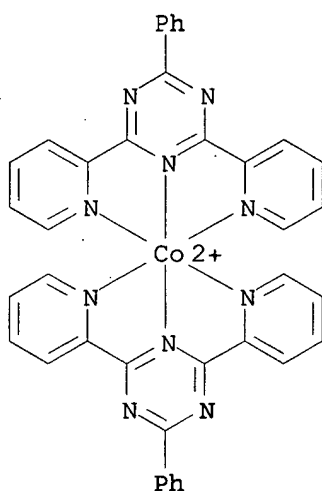
CN Cobalt(2+), bis[2-phenyl-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 864653-13-4

CMF C38 H26 Co N10

CCI CCS

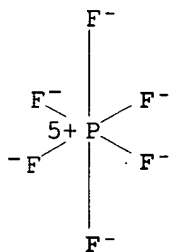


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



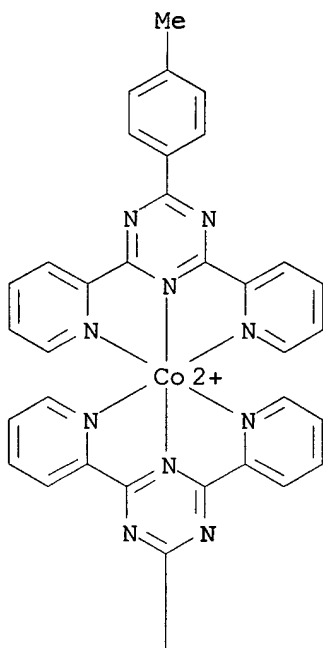
RN 864653-16-7 HCAPLUS

CN Cobalt(1+), bis[2-(4-methylphenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

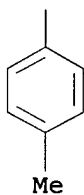
CM 1

CRN 864653-15-6
CMF C40 H30 Co N10
CCI CCS

PAGE 1-A

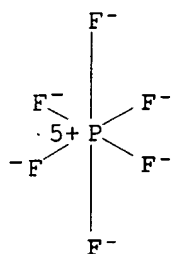


PAGE 2-A



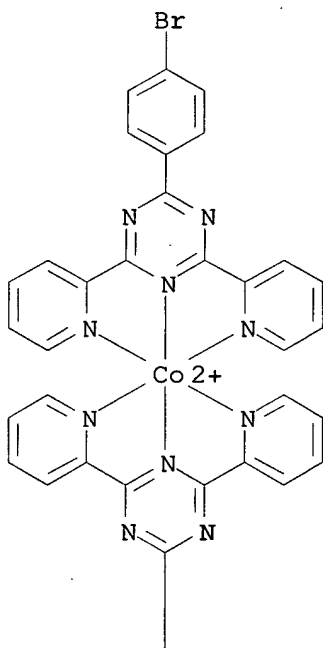
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CRN 16919-18-9
CMF F6 P
CCI CCS

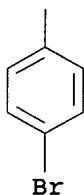


IT 864653-18-9P
 (preparation and electrochem. redox and crystal structure and
 conversion to cobalt chloro triazine derivative complex)
 RN 864653-18-9 HCAPLUS
 CN Cobalt(1+), bis[2-(4-bromophenyl)-4,6-di(2-pyridinyl-κN)-
 1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-
)] (9CI) (CA INDEX NAME)
 CM 1
 CRN 864653-17-8
 CMF C38 H24 Br2 Co N10
 CCI CCS

PAGE 1-A



PAGE 2-A

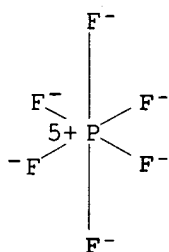


CM 2

CRN 16919-18-9

CMF F6 P

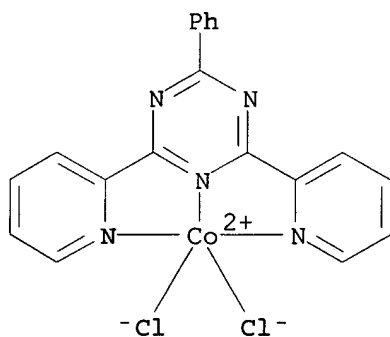
CCI CCS



IT 864653-19-0P 864653-20-3P 864653-21-4P
(preparation of)

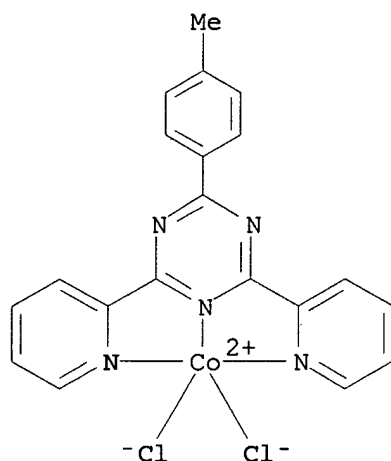
RN 864653-19-0 HCAPLUS

CN Cobalt, dichloro[4-phenyl-2,6-di(2-pyridinyl-κN)-1,3,5-
triazine-κN1]- (9CI) (CA INDEX NAME)

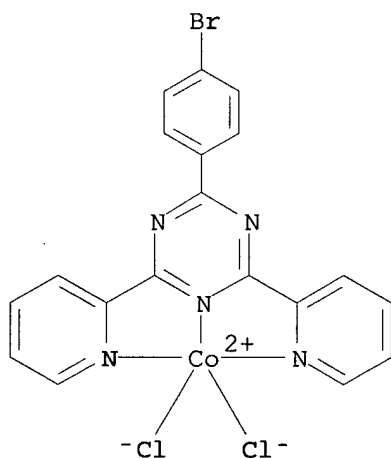


RN 864653-20-3 HCAPLUS

CN Cobalt, dichloro[4-(4-methylphenyl)-2,6-di(2-pyridinyl-κN)-
1,3,5-triazine-κN1]- (9CI) (CA INDEX NAME)



RN 864653-21-4 HCAPLUS
 CN Cobalt, [4-(4-bromophenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]dichloro- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 72, 75
 IT Crystal structure
 Molecular structure
 Oxidation, electrochemical
 Oxidation potential
 Reduction, electrochemical
 Reduction potential
 (of cobalt triazine derivative complexes)
 IT 864653-14-5P 864653-16-7P
 (preparation and electrochem. redox and conversion to cobalt chloro triazine derivative complex)
 IT 864653-18-9P
 (preparation and electrochem. redox and crystal structure and conversion to cobalt chloro triazine derivative complex)
 IT 864653-19-0P 864653-20-3P 864653-21-4P
 (preparation of)
 REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 6 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:264251 HCAPLUS

DOCUMENT NUMBER: 144:54244

TITLE: Electrochemical reduction of oxygen and
hydrogen peroxide **catalyzed** by a
surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-
triazine complex adsorbed on a graphite
electrodeAUTHOR(S): Dias, Vera L. N.; Fernandes, Elizabeth N.; da
Silva, Leila M. S.; Marques, Edmar P.; Zhang,
Jiujun; Marques, Aldalea L. BrandesCORPORATE SOURCE: Department of Technology Chemistry, Campus do
Bacanga, Federal University of Maranhao, Sao
Luis, MA, 65080-040, BrazilSOURCE: Journal of Power Sources (2005), 142(1-2),
10-17

CODEN: JPSODZ; ISSN: 0378-7753

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

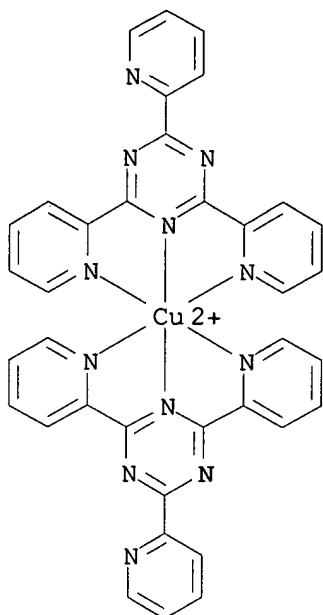
AB A graphite electrode irreversibly adsorbed by 2,4,6-tris(2-pyridyl)-1,3,5-triazine (abbreviated as TPT) was examined by cyclic voltammetry. The adsorbed TPT exhibited two irreversible reduction waves in the potential range of -0.7 and -1.0 V (vs. SCE). Upon strong adsorption, TPT can serve as a coordination ligand for copper ions to form a surface complex. Its three adjacent nitrogen positions provide strong affinity to the metal ions and bond copper(II) to an electrode surface. A 1:1 coordination between Cu(II) or Cu(I) and the TPT ligand to form [Cu(II)(TPT)]²⁺ or [Cu(I)(TPT)]⁺ is the predominant process, evidenced by spectrophotometry, surface cyclic voltammetry, and coordinated structural feasibility of Cu(II)/Cu(I)-TPT complexes. The predominant copper(II)-TPT surface complex shows a reversible redox wave, which is identified as 1-electron process of [Cu(II)(TPT)]²⁺ ⇌ [Cu(I)(TPT)]⁺. The electrode adsorbed by [Cu(II)(TPT)]²⁺ complex showed electrocatalytic activity towards oxygen and/or hydrogen peroxide redns. The **catalyzed** reduction of oxygen and hydrogen peroxide were identified as four-electron and two-electron process to form water. Probably the possible electrocatalytic redns. were due to an inner-sphere mechanism, which involved a coordination between substrate (O₂ or H₂O₂) and [Cu(I)(TPT)]⁺. The reduction kinetics were also studied by a rotating disk electrode method.

IT 116868-55-4P

(electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
1,3,5-triazine complex adsorbed on graphite electrode)

RN 116868-55-4 HCAPLUS

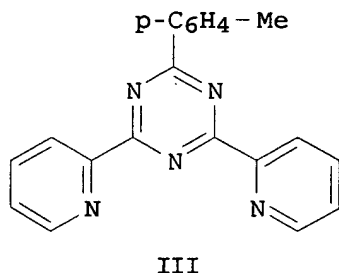
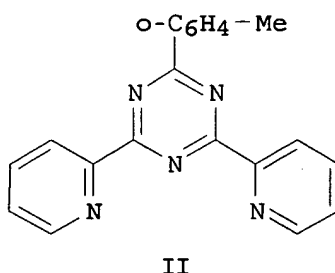
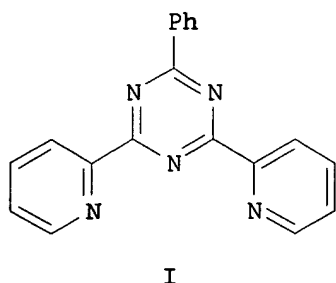
CN Copper(2+), bis[2,6-di(2-pyridinyl)-κN]-4-(2-pyridinyl)-1,3,5-
triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 72, 76
- IT Redox reaction
Reduction, electrochemical
Surface reaction **catalysts**
(electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
1,3,5-triazine complex adsorbed on graphite electrode)
- IT Reduction kinetics
(electrochem.; electrochem. reduction of oxygen and hydrogen
peroxide **catalyzed** by surface copper(II)-2,4,6-tris(2-
pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode)
- IT Cyclic voltammetry
(of TPT and TPT-Cu complexes adsorbed onto graphite electrodes;
electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
1,3,5-triazine complex adsorbed on graphite electrode)
- IT Coordination compounds
(reaction mechanism involving; electrochem. reduction of oxygen and
hydrogen peroxide **catalyzed** by surface
copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex
adsorbed on graphite electrode)
- IT Electrodes
(rotating disk electrodes; electrochem. reduction of oxygen and
hydrogen peroxide **catalyzed** by surface
copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex
adsorbed on graphite electrode)
- IT 7722-84-1, Hydrogen peroxide, processes 7782-44-7, Oxygen,
processes
(electrochem. reduction of oxygen and hydrogen peroxide
catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-
1,3,5-triazine complex adsorbed on graphite electrode)
- IT 64-19-7, Acetic acid, uses 7601-89-0, Sodium perchlorate
7664-38-2, Phosphoric acid, uses 10043-35-3, Boric acid, uses
(electrochem. reduction of oxygen and hydrogen peroxide

IT 286832-00-6 catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode
(electrochem. reduction of oxygen and hydrogen peroxide)
IT 116868-55-4P catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode
(electrochem. reduction of oxygen and hydrogen peroxide)
IT 1310-73-2, Sodium hydroxide, uses catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode
(electrochem. reduction of oxygen and hydrogen peroxide)
IT 3682-35-7, 2,4,6-Tris(2-pyridyl)-1,3,5-triazine catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode
(electrochem. reduction of oxygen and hydrogen peroxide)
IT 7782-42-5, Graphite, uses catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode
(electrochem. reduction of oxygen and hydrogen peroxide)
IT 7758-98-7, Cupric sulfate, reactions catalyzed by surface copper(II)-2,4,6-tris(2-pyridyl)-1,3,5-triazine complex adsorbed on graphite electrode
(electrochem. reduction of oxygen and hydrogen peroxide)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 7 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:693087 HCAPLUS
DOCUMENT NUMBER: 141:359869
TITLE: Ruthenium complexes of easily accessible tridentate ligands based on the 2-aryl-4,6-bis(2-pyridyl)-s-triazine motif: Absorption spectra, luminescence properties, and redox behavior
AUTHOR(S): Polson, Matthew I. J.; Medlycott, Elaine A.; Hanan, Garry S.; Mikelsons, Larisa; Taylor, Nick J.; Watanabe, Masashi; Tanaka, Yasutaka; Loiseau, Frederique; Passalacqua, Rosalba; Campagna, Sebastiano
CORPORATE SOURCE: Departement de Chimie, Universite de Montreal, Montreal, QC, H3T 1J4, Can.
SOURCE: Chemistry--A European Journal (2004), 10(15), 3640-3648
CODEN: CEUJED; ISSN: 0947-6539
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:359869
GI



AB A family of tridentate ligands 1a-e (I-III), based on the 2-aryl-4,6-di(2-pyridyl)-s-triazine motif, was prepared along with their hetero- and homoleptic RuII complexes 2a-e ([Ru(tpy)(1a-e)]²⁺; tpy = 2,2':6',2''-terpyridine) and 3a-e ([Ru(1a-e)₂]²⁺), resp. The ligands and their complexes were characterized by ¹H NMR spectroscopy, ES-MS, and elemental anal. Single-crystal x-ray anal. of 2a and 2e demonstrated that the triazine core is nearly coplanar with the noncoordinating ring, with dihedral angles of 1.2 and 18.6°, resp. The redox behavior and electronic absorption and luminescence properties (both at room temperature in liquid MeCN and at 77 K in butyronitrile rigid matrix) were studied. Each species undergoes one **oxidation** process centered on the metal ion, and several (three for 2a-e and four for 3a-e) reduction processes centered on the ligand orbitals. All compds. exhibit intense absorption bands in the UV region, assigned to spin-allowed ligand-centered (LC) transitions, and moderately intense spin-allowed metal-to-ligand charge-transfer (MLCT) absorption bands in the visible region. The compds. exhibit relatively intense emissions, originating from triplet MLCT levels, both at 77 K and at room temperature. The incorporation of triazine rings and the near planarity of the noncoordinating ring increase the luminescence lifetimes of the complexes by lowering the energy of the 3MLCT state and creating a large energy gap to the dd state.

IT 21791-68-4 69666-63-3 69667-97-6
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 774219-69-1 774219-70-4 774219-71-5
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 774219-81-7 774219-82-8 774219-83-9
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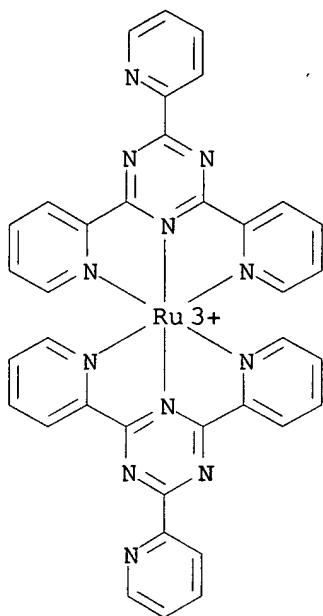
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(formation and redox potential of)

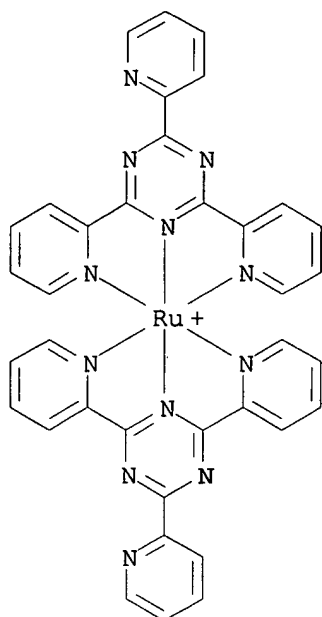
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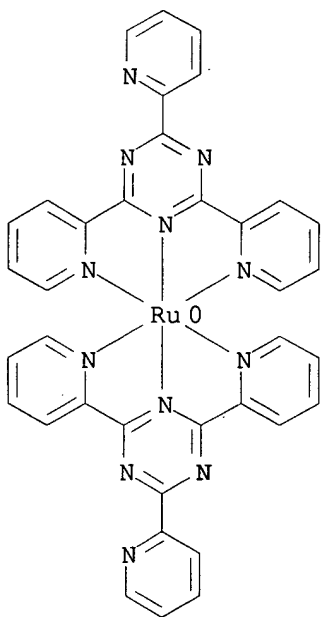


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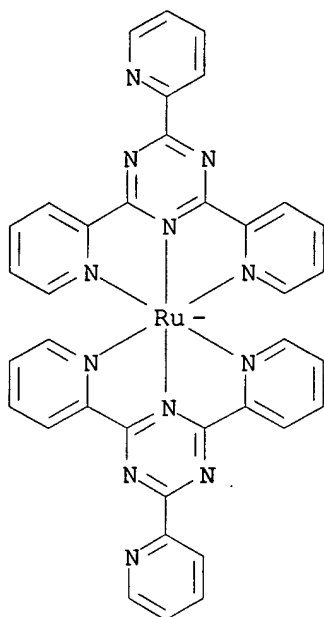
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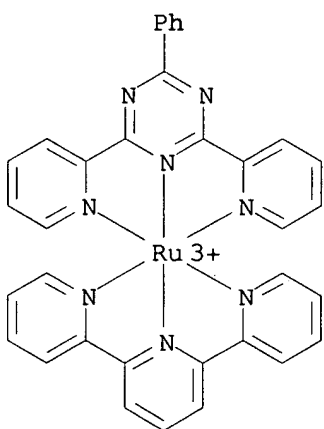
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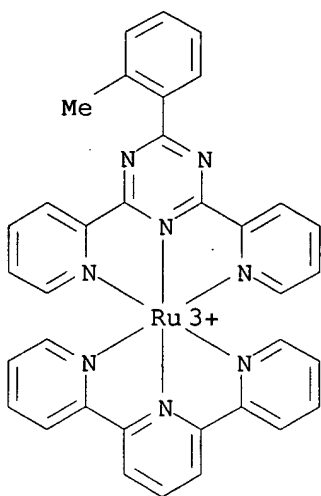
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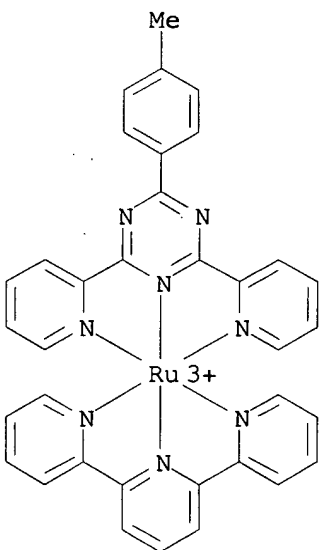
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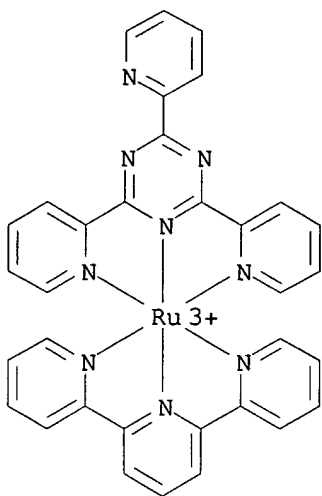
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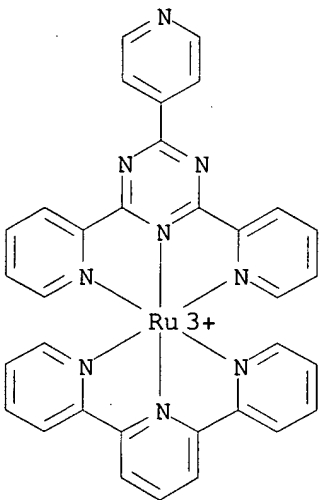
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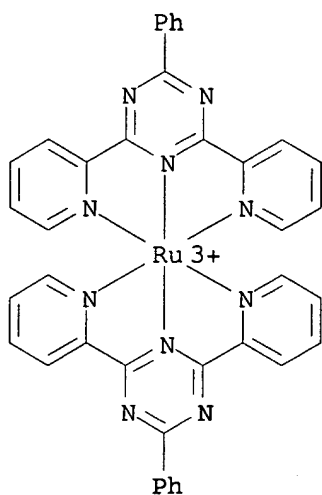
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RN 774219-71-5 HCAPLUS
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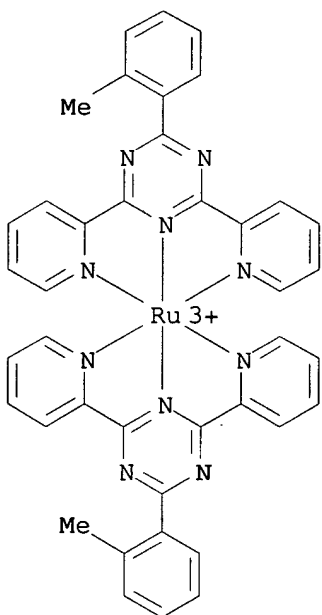


RN 774219-72-6 HCAPLUS
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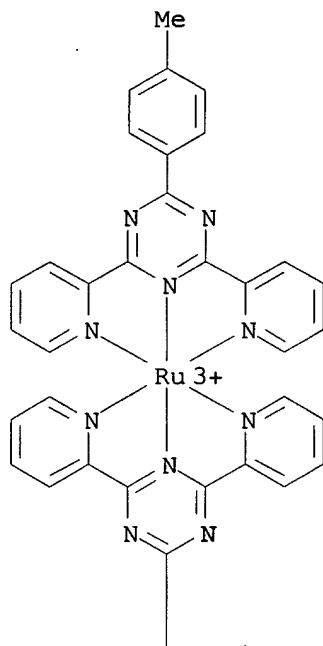
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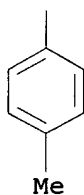
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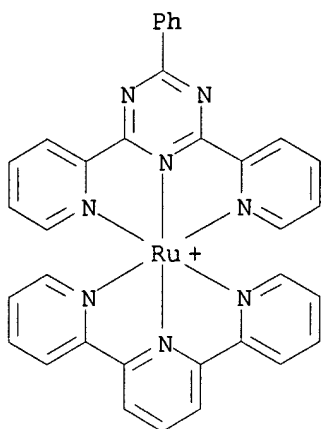
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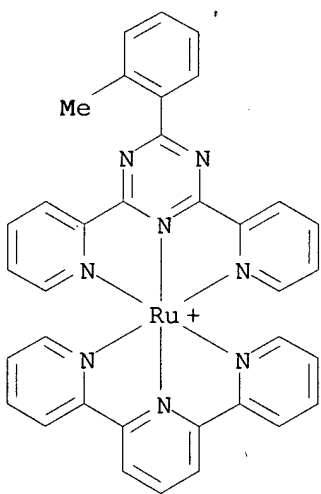


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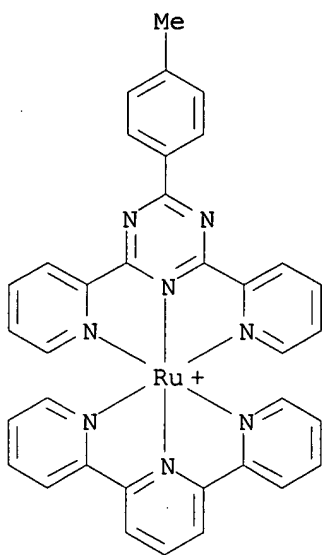
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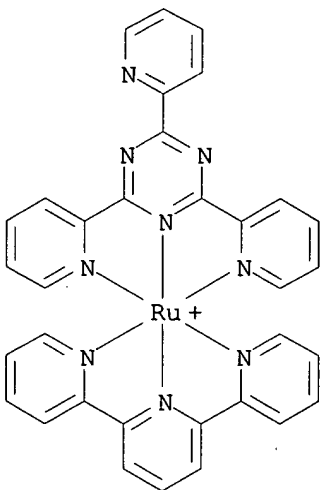


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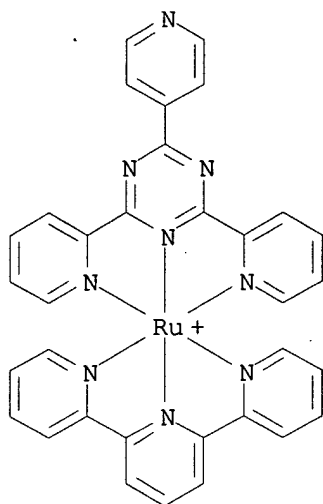
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RN 774219-78-2 HCAPLUS
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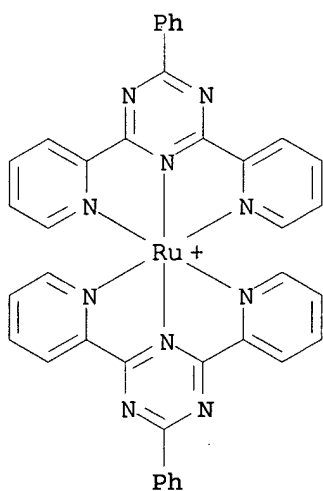


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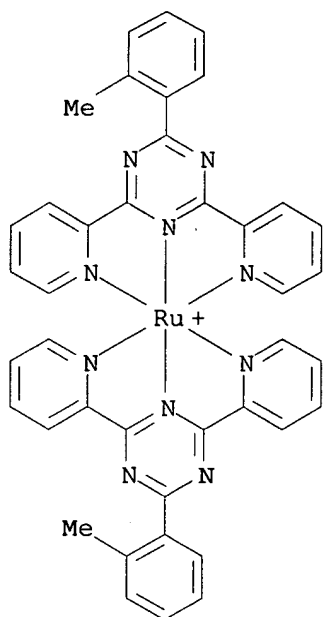
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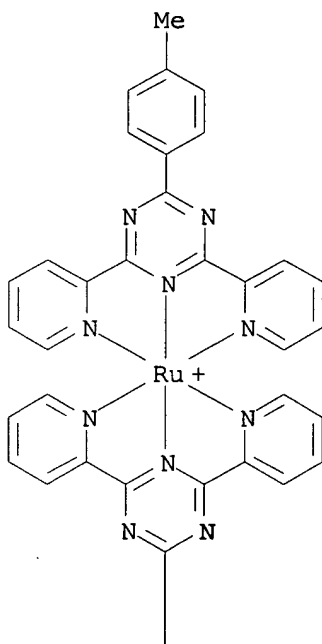
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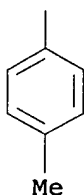


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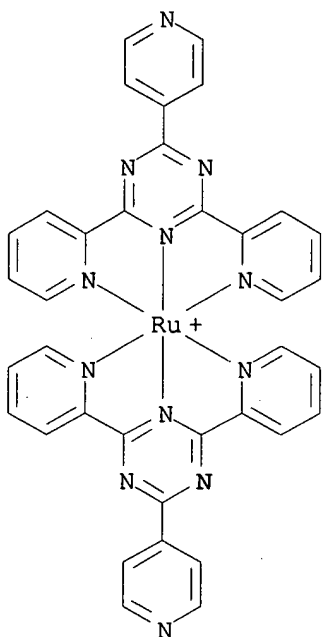


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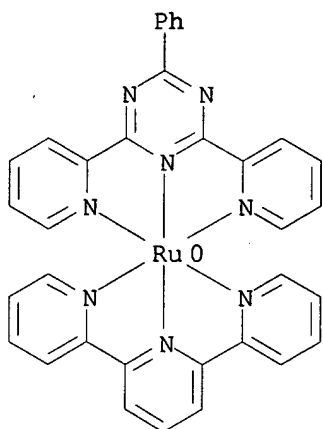
RN 774219-83-9 HCAPLUS

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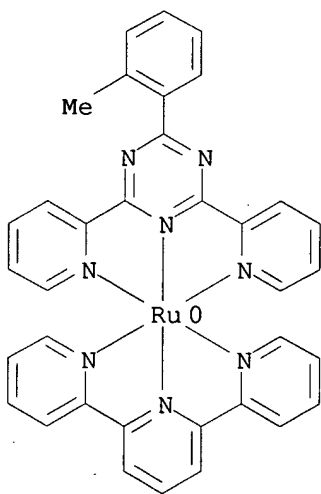
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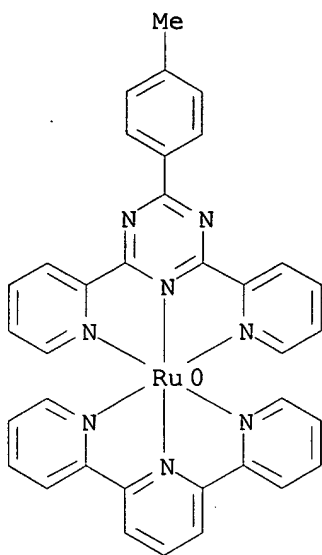
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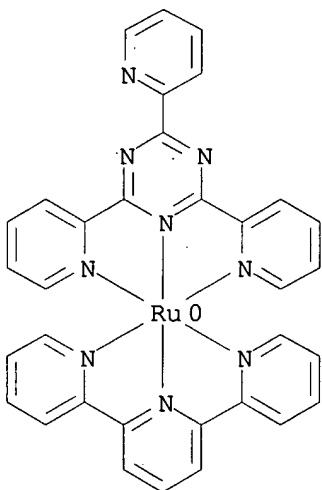


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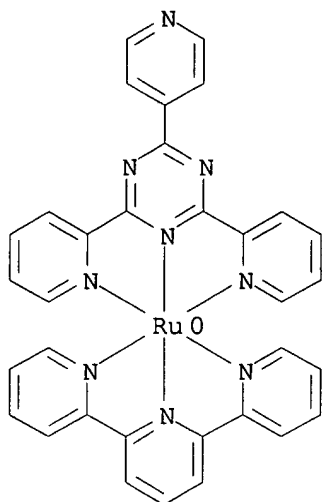
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RN 774219-87-3 HCAPLUS
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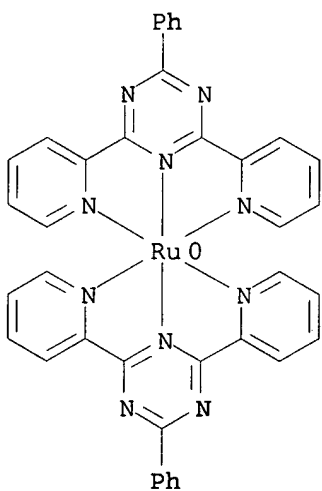


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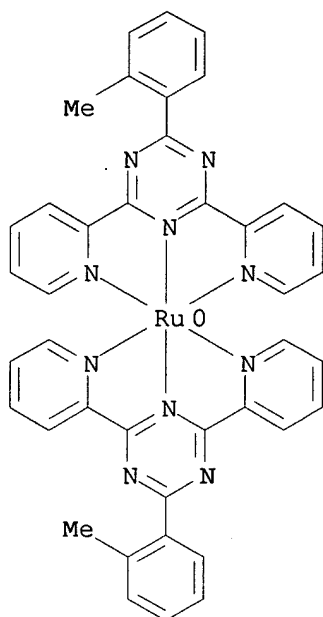
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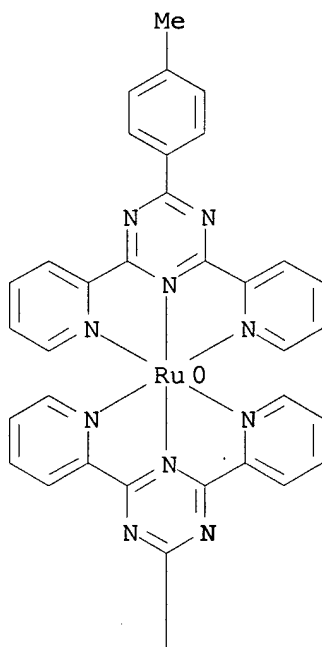
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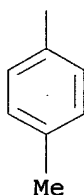


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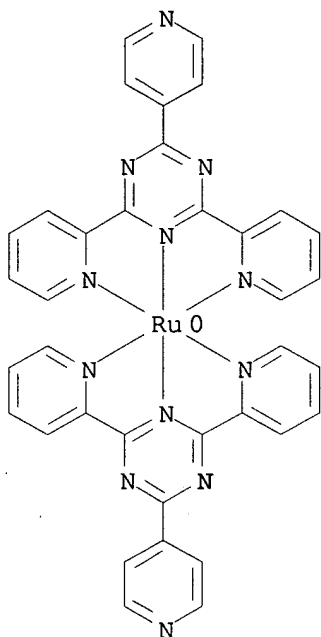
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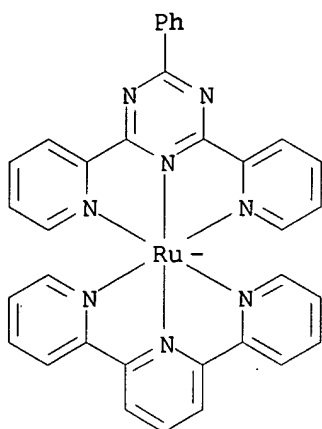
PAGE 2-A



RN 774219-92-0 HCAPLUS
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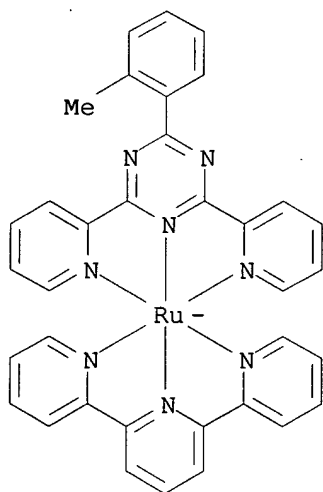


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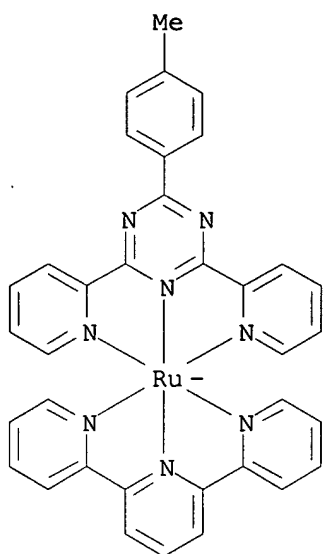
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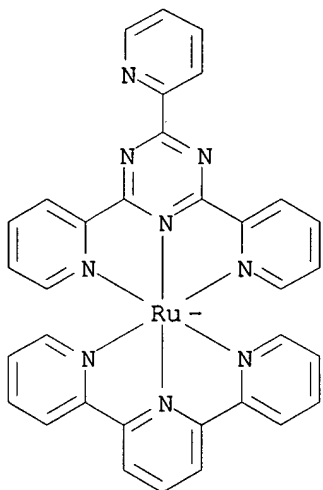


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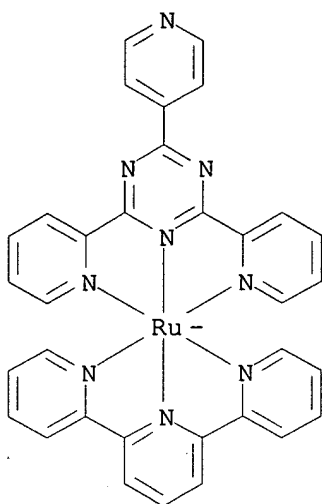
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RN 774219-96-4 HCAPLUS
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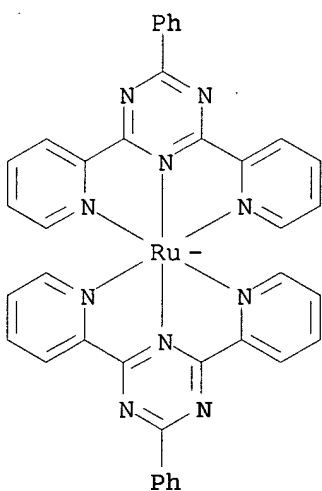


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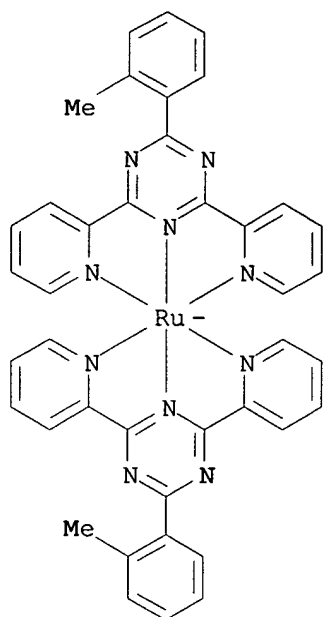
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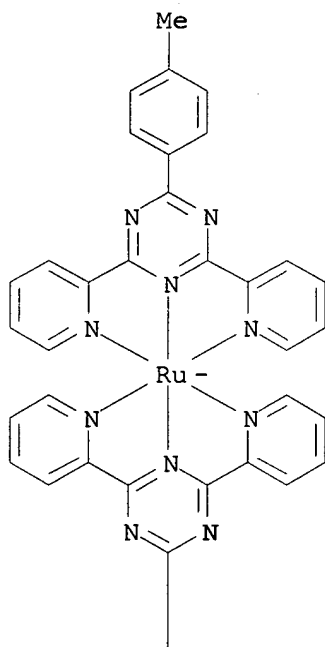
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CN Ruthenate(1-), bis[4-(2-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

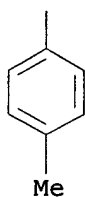


RN 774220-00-7 HCAPLUS
 CN Ruthenate(1-), bis[4-(4-methylphenyl)-2,6-di(2-pyridinyl-κN)-
 1,3,5-triazine-κN1]-, (OC-6-1'2) - (9CI) (CA INDEX NAME)

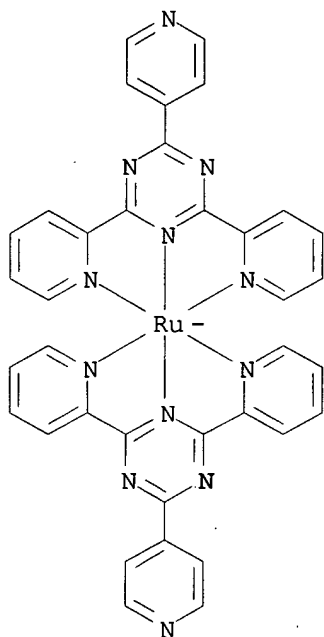
PAGE 1-A



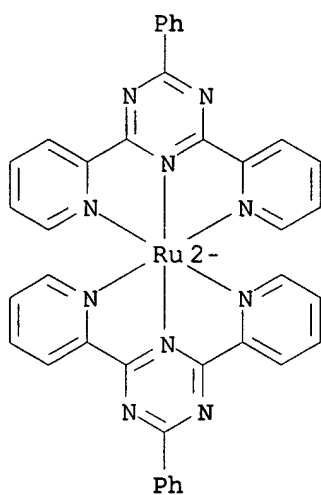
PAGE 2-A



RN 774220-01-8 HCAPLUS
CN Ruthenate(1-), bis[2,6-di(2-pyridinyl-κN)-4-(4-pyridinyl)-
1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

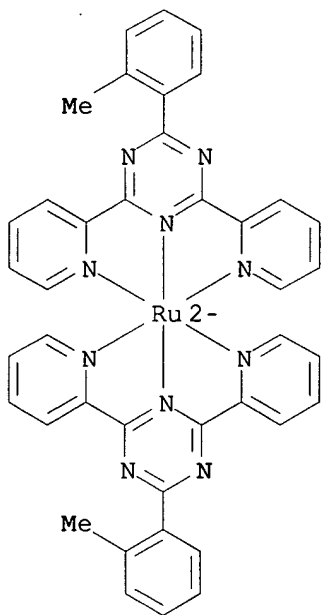


RN 774220-02-9 HCAPLUS
CN Ruthenate(2-), bis[4-phenyl-2,6-di(2-pyridinyl-κN)-1,3,5-
triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774220-03-0 HCAPLUS

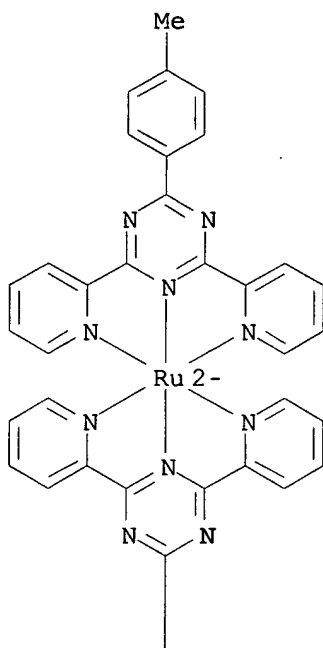
CN Ruthenate(2-), bis[4-(2-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



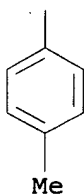
RN 774220-04-1 HCAPLUS

CN Ruthenate(2-), bis[4-(4-methylphenyl)-2,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

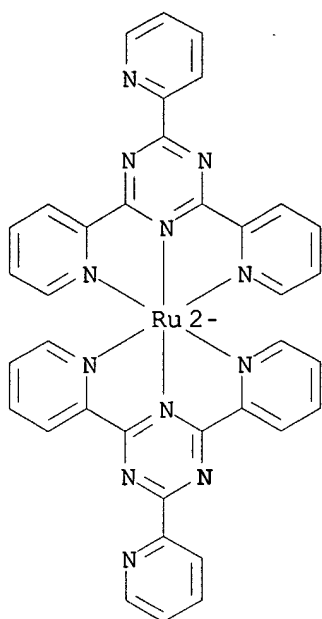
PAGE 1-A



PAGE 2-A

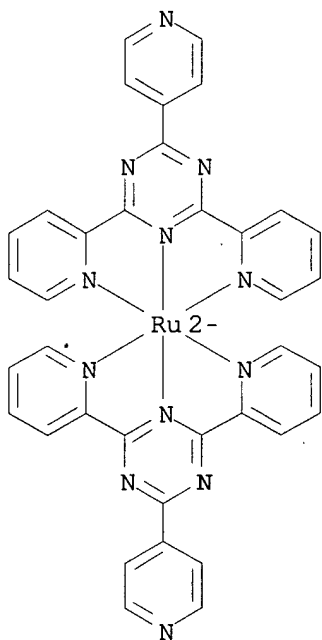


RN 774220-05-2 HCAPLUS
 CN Ruthenate(2-), bis[4-(2-pyridinyl)-2,6-di(2-pyridinyl-κN)-
 1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 774220-06-3 HCAPLUS

CN Ruthenate(2-), bis[2,6-di(2-pyridinyl-κN)-4-(4-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



IT 461388-76-1P 774219-58-8P

(preparation, crystal structure, cyclic voltammetry, luminescence and UV-visible spectra of)

RN 461388-76-1 HCAPLUS

CN Ruthenium(2+), [2-phenyl-4,6-di(2-pyridinyl-κN)-1,3,5-

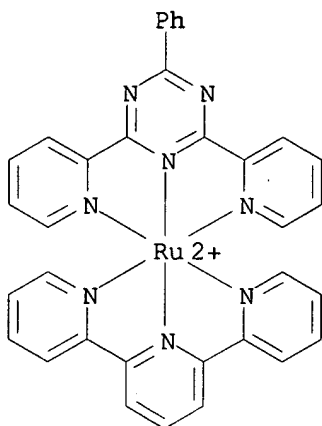
triazine- κ N5] (2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)-,
bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 461388-73-8

CMF C34 H24 N8 Ru

CCI CCS

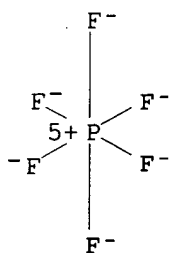


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-58-8 HCAPLUS

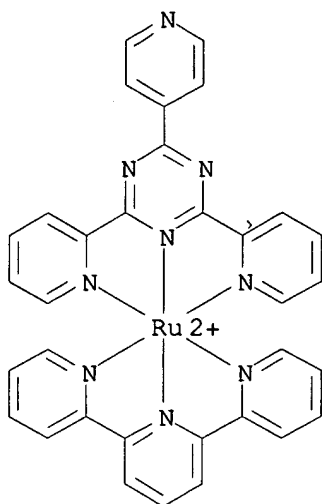
CN Ruthenium(2+), [2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1] (2,2':6',2''-terpyridine- κ N1, κ N1', κ N1'')-, (OC-6-23)-,
bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 461388-74-9

CMF C33 H23 N9 Ru

CCI CCS

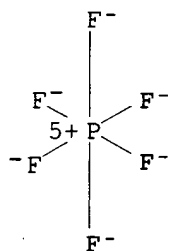


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



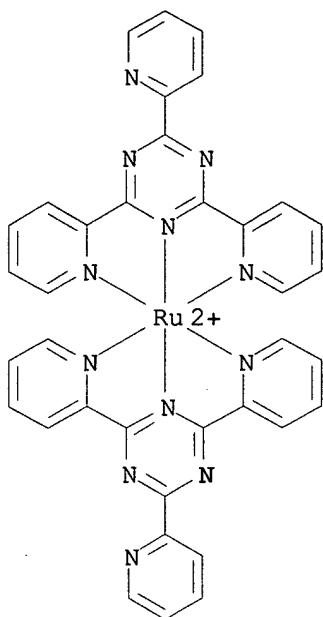
IT 75964-99-7P 774219-62-4P 774219-64-6P
 (preparation, cyclic voltammetry, and UV-visible spectrum of)
 RN 75964-99-7 HCAPLUS
 CN Ruthenium(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-
 1,3,5-triazine-κN1]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-
)] (9CI) (CA INDEX NAME)

CM 1

CRN 61037-16-9

CMF C36 H24 N12 Ru

CCI CCS

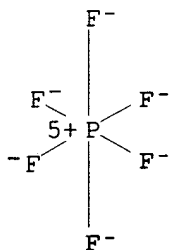


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-62-4 HCAPLUS

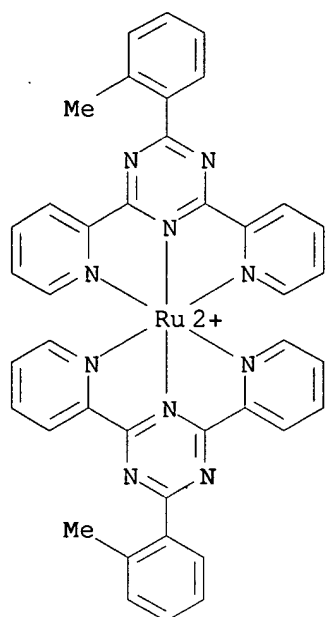
CN Ruthenium(2+), bis[2-(2-methylphenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-61-3

CMF C40 H30 N10 Ru

CCI CCS

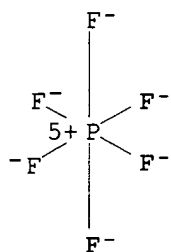


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-64-6 HCAPLUS

CN Ruthenium(2+), bis[2-(4-methylphenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

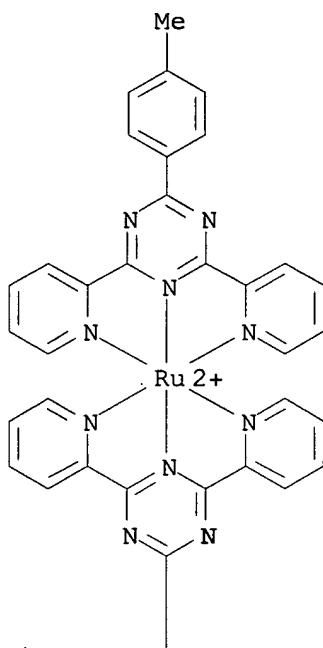
CM 1

CRN 774219-63-5

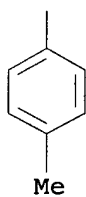
CMF C40 H30 N10 Ru

CCI CCS

PAGE 1-A



PAGE 2-A

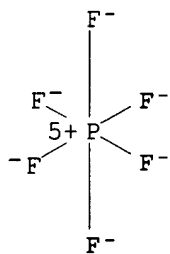


CM 2

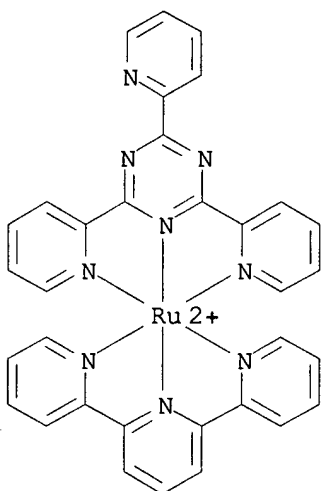
CRN 16919-18-9

CMF F6 P

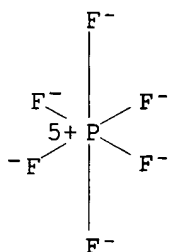
CCI CCS



IT 134388-06-0P 774219-55-5P 774219-57-7P
 774219-60-2P 774219-66-8P
 (preparation, cyclic voltammetry, luminescence and UV-visible
 spectra of)
 RN 134388-06-0 HCAPLUS
 CN Ruthenium(2+), (2,2':6',2''-terpyridine-
 κ N1, κ N1', κ N1'') (2,4,6-tri-2-pyridinyl-1,3,5-
 triazine- κ N1, κ N2, κ N6)-, (OC-6-23)-,
 bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)
 CM 1
 CRN 134388-05-9
 CMF C33 H23 N9 Ru
 CCI CCS



CM 2
 CRN 16919-18-9
 CMF F6 P
 CCI CCS



RN 774219-55-5 HCAPLUS
 CN Ruthenium(2+), [2-(2-methylphenyl)-4,6-di(2-pyridinyl- κ N)-
 1,3,5-triazine- κ N5] (2,2':6',2''-terpyridine-
 κ N1, κ N1', κ N1'')-, (OC-6-23)-,

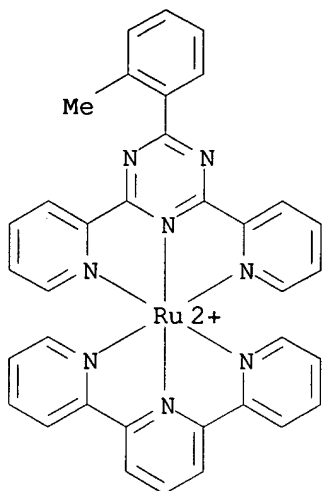
bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-54-4

CMF C35 H26 N8 Ru

CCI CCS

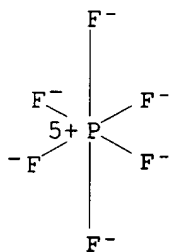


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-57-7 HCAPLUS

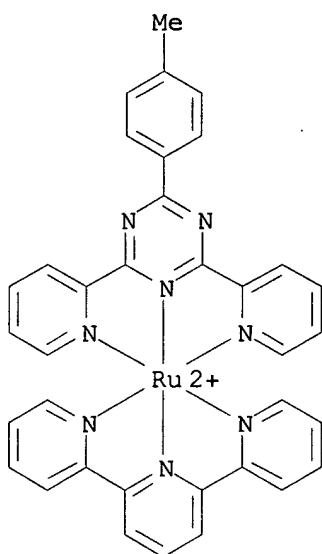
CN Ruthenium(2+), [2-(4-methylphenyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5] (2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-56-6

CMF C35 H26 N8 Ru

CCI CCS

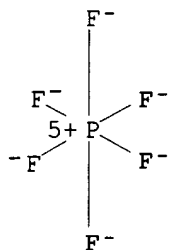


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-60-2 HCAPLUS

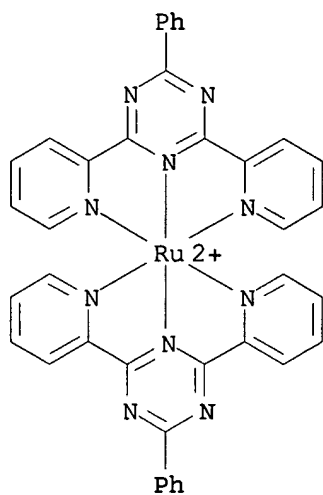
CN Ruthenium(2+), bis[2-phenyl-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)]
(9CI) (CA INDEX NAME)

CM 1

CRN 774219-59-9

CMF C38 H26 N10 Ru

CCI CCS

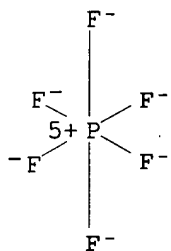


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 774219-66-8 HCAPLUS

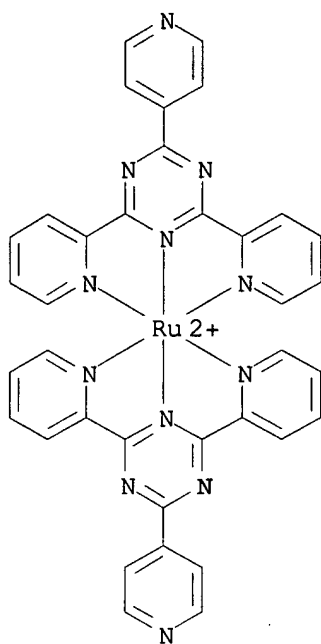
CN Ruthenium(2+), bis[2,6-di(2-pyridinyl-κN)-4-(4-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 774219-65-7

CMF C36 H24 N12 Ru

CCI CCS

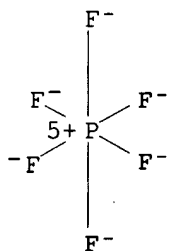


CM 2

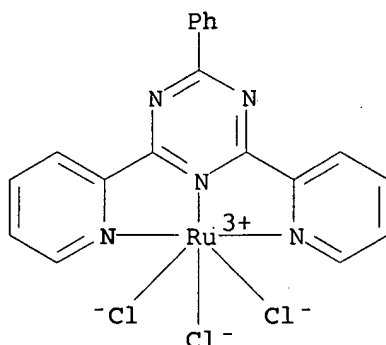
CRN 16919-18-9

CMF F6 P

CCI CCS



IT 873216-50-3P
 (preparation, cyclic voltammetry, luminescence and UV-visible
 spectra of)
 RN 873216-50-3 HCAPLUS
 CN INDEX NAME NOT YET ASSIGNED



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 72, 73, 75

IT 21791-68-4 69666-63-3 69667-97-6

69730-33-2 774219-67-9 774219-68-0

774219-69-1 774219-70-4 774219-71-5

774219-72-6 774219-73-7 774219-74-8

774219-75-9 774219-76-0 774219-77-1

774219-78-2 774219-79-3 774219-80-6

774219-81-7 774219-82-8 774219-83-9

774219-84-0 774219-85-1 774219-86-2

774219-87-3 774219-88-4 774219-89-5

774219-90-8 774219-91-9 774219-92-0

774219-93-1 774219-94-2 774219-95-3

774219-96-4 774219-97-5 774219-98-6

774219-99-7 774220-00-7 774220-01-8

774220-02-9 774220-03-0 774220-04-1

774220-05-2 774220-06-3

(formation and redox potential of)

IT 461388-76-1P 774219-58-8P

(preparation, crystal structure, cyclic voltammetry, luminescence and UV-visible spectra of)

IT 75964-99-7P 774219-62-4P 774219-64-6P

(preparation, cyclic voltammetry, and UV-visible spectrum of)

IT 134388-06-0P 774219-55-5P 774219-57-7P

774219-60-2P 774219-66-8P

(preparation, cyclic voltammetry, luminescence and UV-visible spectra of)

IT 873216-50-3P

(preparation, cyclic voltammetry, luminescence and UV-visible spectra of)

REFERENCE COUNT:

61

THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 8 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:443925 HCAPLUS

DOCUMENT NUMBER: 141:166707

TITLE: Potential inhibitors of DNA topoisomerase II: ruthenium(II) poly-pyridyl and pyridyl-azine complexes

AUTHOR(S): Chandra, Manish; Sahay, A. N.; Pandey, D. S.; Tripathi, R. P.; Saxena, J. K.; Reddy, V. J. M.; Puerta, M. Carmen; Valerga, Pedro

CORPORATE SOURCE: Department of Chemistry, Awadhesh Pratap Singh University, Rewa, 486 003, India

SOURCE: Journal of Organometallic Chemistry (2004),
689(13), 2256-2267
CODEN: JORCAI; ISSN: 0022-328X

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 141:166707

AB In search of new DNA probes new mono and binuclear cationic complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{L})]^+$ and $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(-\mu-\text{L})\text{RuH}(\text{CO})(\text{PPh}_3)_2]^{2+}$ [L = pyridine-2-carbaldehyde azine (paa), p-phenylene-bis(picoline)aldimine (pbp) and p-biphenylene-bis(picoline)aldimine (bbp)] were synthesized. The reaction products were characterized by microanalyses, spectral (IR, UV-visible, NMR and ESMS and FAB-MS) and electrochem. studies. Structure of the representative mononuclear complex $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{paa})]\text{BF}_4$ was crystallog. determined. The crystal packing in $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{paa})]\text{BF}_4$ is stabilized by intermol. π - π stacking resulting into a spiral network. Topoisomerase II inhibitory activity of the complexes and a few other related complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{L})]^+$ [L = 2,4,6-tris(2-pyridyl)-1,3,5-triazine (tptz) and 2,3-bis(2-pyridyl)-pyrazine (bppz)] were examined against filarial parasite *Setaria cervi*. Absorption titration expts. provided good support for DNA interaction and binding consts. also were calculated which were found in the range 1.2×10^3 - 4.01×10^4 M⁻¹.

IT 442848-09-1
(effect on DNA Topoisomerase II activity of *S. cervi*)

RN 442848-09-1 HCAPLUS

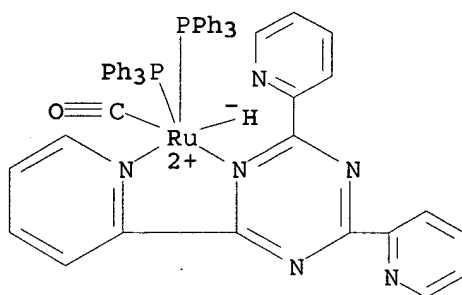
CN Ruthenium(1+), carbonylhydro[2-(2-pyridinyl- κ N)-4,6-di-2-pyridinyl-1,3,5-triazine- κ N1]bis(triphenylphosphine)-, (OC-6-15)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 442848-08-0

CMF C55 H43 N6 O P2 Ru

CCI CCS

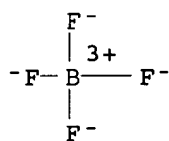


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 10, 68, 72, 75

IT 442848-09-1 442848-12-6 442848-14-8

(effect on DNA Topoisomerase II activity of s. cervi)

REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 9 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:392560 HCAPLUS

DOCUMENT NUMBER: 140:408669

TITLE: Use of metal complex compounds as
oxidation catalysts

INVENTOR(S): Schlingloff, Gunther; Wieprecht, Torsten;
Heinz, Uwe; Schneider, Albert; Dubs,
Marie-Josée; Bachmann, Frank; Hazenkamp,
Menno; Ehlis, Thomas; Vincenzi, Cornelia;
Dannacher, Josef

PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.;
et al.

SOURCE: PCT Int. Appl., 94 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004039934	A1	20040513	WO 2003-EP11636	2003 1021
<p>W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW</p> <p>RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG</p>				
AU 2003278117	A1	20040525	AU 2003-278117	2003 1021
EP 1556467	A1	20050727	EP 2003-769428	2003 1021
<p>R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,</p>				

EE, HU, SK				
BR 2003015869	A	20050927	BR 2003-15869	2003 1021
JP 2006504517	T2	20060209	JP 2004-547539	2003 1021
US 2006052265	A1	20060309	US 2005-531906	2005 0418
PRIORITY APPLN. INFO.:			EP 2002-405929	A 2002 1030
			WO 2003-EP11636	W 2003 1021

OTHER SOURCE(S): MARPAT 140:408669

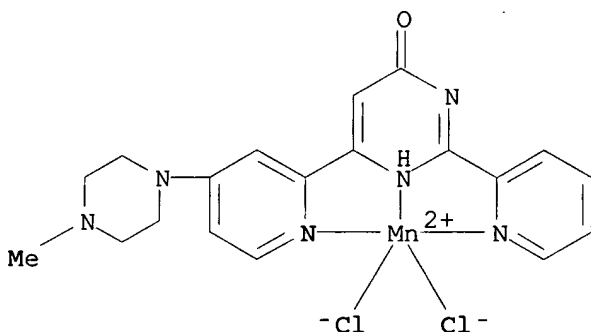
AB The invention relates to the use of metal complex compds. of formula $[LnMemXp]zYq$ [X = coordinating or bridging radical; n, m = 1-8; p = 0-32; z = charge of metal complex; Me = metals; Y = counter ions; q = z/(charge of Y); L = specified ligands] as **catalysts** for **oxidation** reactions particularly by peroxides such as in textile bleaching without damaging fibers and dyeings, and also novel metal complex compds. and novel ligands.

IT 860469-44-9P 860469-45-0P

(manufacture and use of metal complex compds. as **oxidation catalysts**)

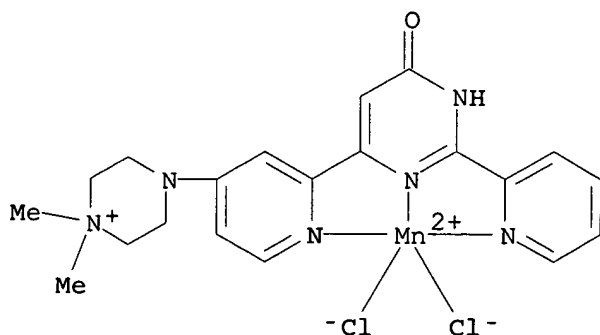
RN 860469-44-9 HCAPLUS

CN Manganese, dichloro[6-[4-(4-methyl-1-piperazinyl)-2-pyridinyl-κN]-2-(2-pyridinyl-κN)-4(1H)-pyrimidinone-κN1]- (9CI) (CA INDEX NAME)



RN 860469-45-0 HCAPLUS

CN Manganese(1+), dichloro[4-[2-[1,6-dihydro-6-oxo-2-(2-pyridinyl-κN)-4-pyrimidinyl-κN3]-4-pyridinyl-κN]-1,1-dimethylpiperazinium]-, iodide (9CI) (CA INDEX NAME)



● I⁻

- IC ICM C11D003-395
ICS C11D003-16; C07D401-14; C11D003-39
- CC 46-5 (Surface Active Agents and **Detergents**)
Section cross-reference(s): 40, 43, 78
- ST **oxidn catalyst metal complex**
- IT Textiles
(cotton; manufacture and use of metal complex compds. as **oxidation catalysts**)
- IT Bleaching
Oxidation catalysts
Pulp bleaching
Textiles
(manufacture and use of metal complex compds. as **oxidation catalysts**)
- IT 7722-84-1, Hydrogen peroxide, uses 7782-44-7, Oxygen, uses
(bleaching agent; manufacture and use of metal complex compds. as **oxidation catalysts**)
- IT 688753-55-1P
(ligands; manufacture and use of metal complex compds. as **oxidation catalysts**)
- IT 860469-44-9P 860469-45-0P
(manufacture and use of metal complex compds. as **oxidation catalysts**)
- IT 19235-89-3P, 4-Chloro-2-cyanopyridine 64064-56-8P,
4-Chloropyridine-2-carboxylic acid ethyl ester 75239-97-3P
99586-65-9P 688753-53-9P 688753-54-0P 688753-56-2P
688753-57-3P 688753-58-4P 688753-59-5P 688753-60-8P
688753-61-9P 688753-62-0P
(manufacture and use of metal complex compds. as **oxidation catalysts**)
- IT 50-01-1, Guanidine hydrochloride 57-13-6, Urea, reactions
64-17-5, Ethanol, reactions 98-98-6, Picolinic acid 100-70-9,
2-Cyanopyridine 109-01-3, 1-Methylpiperazine 141-78-6, Ethyl
acetate, reactions 1336-21-6, Ammonium hydroxide 10239-68-6
12125-02-9, Ammonium chloride, reactions 51285-26-8,
2-Amidinopyridine hydrochloride
(manufacture and use of metal complex compds. as **oxidation catalysts**)
- IT 7646-69-7, Sodium hydride 7719-09-7, Thionyl chloride
(manufacture and use of metal complex compds. as **oxidation catalysts**)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 10 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:551674 HCAPLUS
DOCUMENT NUMBER: 139:114098
TITLE: Method and reagent for colorimetry using
transition metal complex and oxidoreductase
INVENTOR(S): Nagakawa, Kenji; Tsujimoto, Tomomichi;
Nishino, Susumu; Teramoto, Masaaki; Kawase,
Yoshiyuki
PATENT ASSIGNEE(S): Arkray, Inc., Japan
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003057905	A1	20030717	WO 2003-JP27	2003 0106
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2448128	AA	20030628	CA 2003-2448128	2003 0106
AU 2003201901	A1	20030724	AU 2003-201901	2003 0106
CN 1522302	A	20040818	CN 2003-800604	2003 0106
EP 1457572	A1	20040915	EP 2003-700461	2003 0106
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
NZ 529279	A	20051223	NZ 2003-529279	2003 0106
ZA 2003008519	A	20041104	ZA 2003-8519	2003 1031
US 2004142406	A1	20040722	US 2003-476298	

PRIORITY APPLN. INFO.:

JP 2001-400380

A

2003
12112001
1228

WO 2003-JP27

W

2003
0106

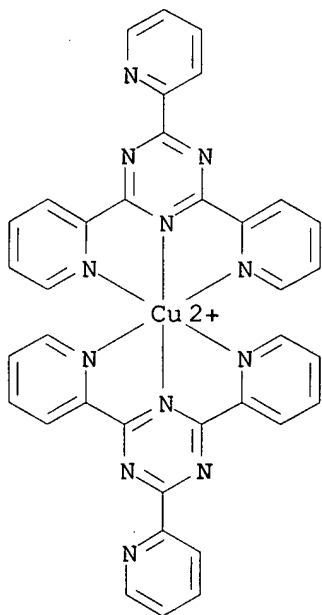
AB A method for colorimetry of an analyte (e.g., glucose, cholesterol, uric acid, pyruvic acid, lactic acid) is provided, with which reliable analyses are easily performed in a short time. The analyte is qual. or quant. determined by transferring electrons via a mediator with an oxidoreductase from the analyte to a color forming agent capable of forming a color by reduction, and measuring the color developed from the color forming agent. Since the enzymic reaction of this colorimetry is an one-step reaction and the coloring reaction is generated via an mediator, measurements are performed within a short time. The measurement values are highly reliable because this reaction needs neither hydrogen peroxide nor oxygen. Also provided is a reagent used in this method.

IT 116868-55-4P 321358-74-1P

(method and reagent for colorimetry using transition metal complex and oxidoreductase)

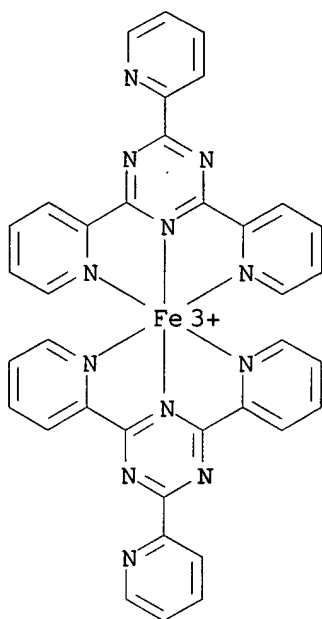
RN 116868-55-4 HCAPLUS

CN Copper(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 321358-74-1 HCAPLUS

CN Iron(3+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



IC ICM C12Q001-32
ICS G01N021-78; G01N031-22; G01N033-52
CC 9-5 (Biochemical Methods)
IT Blood analysis
Color formers
Colorimetry
Electron transfer **catalysts**
UV and visible spectroscopy
(method and reagent for colorimetry using transition metal
complex and oxidoreductase)

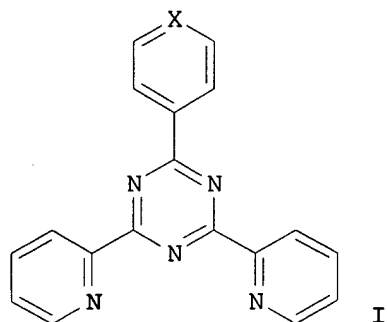
IT 131-91-9DP, Fe3+ complexes 2066-93-5DP, Fe3+ complexes
13479-49-7P 14971-82-5P 15823-71-9P 18661-69-3P
29676-71-9DP, Fe3+ complexes 53204-05-0P 73562-37-5P
80459-15-0DP, Fe3+ complexes 80459-17-2DP, Fe3+ complexes
116868-55-4P 128653-82-7P 139542-74-8DP, Fe3+
complexes 144975-47-3P 144975-48-4P 205445-01-8P
321358-74-1P 554429-11-7P 562864-75-9P 562864-76-0P
562864-77-1P 562864-79-3P 562867-30-5P 562868-04-6P
562868-06-8P
(method and reagent for colorimetry using transition metal
complex and oxidoreductase)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 11 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:460743 HCAPLUS
DOCUMENT NUMBER: 137:256806
TITLE: Facile syntheses of tridentate ligands for
room-temperature luminescence in ruthenium
complexes
AUTHOR(S): Polson, Matthew I. J.; Taylor, Nicholas J.;
Hanan, Garry S.
CORPORATE SOURCE: Department of Chemistry, University of
Waterloo, Waterloo, Can.
SOURCE: Chemical Communications (Cambridge, United

PUBLISHER:
DOCUMENT TYPE:
LANGUAGE:
OTHER SOURCE(S):
GI

Kingdom) (2002), (13), 1356-1357
CODEN: CHCOFS; ISSN: 1359-7345
Royal Society of Chemistry
Journal
English
CASREACT 137:256806



AB A new family of easily prepared and functionalized terpyridine-like ligands exhibit room-temperature luminescence as their Ru(II) complexes. Results of the luminescence, UV-visible and cyclic voltammetric studies of Ru(tpy)(L) (tpy = terpyridine, L = I, X = CH, N, N+-Me) are reported.

IT 461388-77-2P

(preparation and crystal structure)

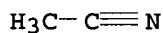
RN 461388-77-2 HCAPLUS

CN Ruthenium(2+), [2-phenyl-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5] (2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)-, bis[hexafluorophosphate(1-)], compd. with acetonitrile (2:1) (9CI)
(CA INDEX NAME)

CM 1

CRN 75-05-8

CMF C2 H3 N



CM 2

CRN 461388-76-1

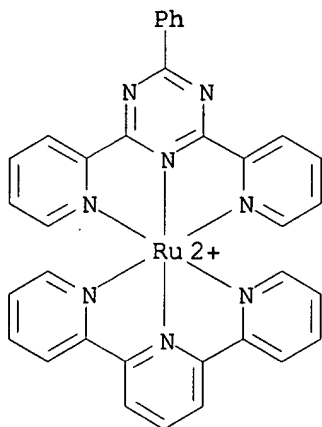
CMF C34 H24 N8 Ru . 2 F6 P

CM 3

CRN 461388-73-8

CMF C34 H24 N8 Ru

CCI CCS

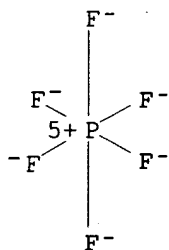


CM 4

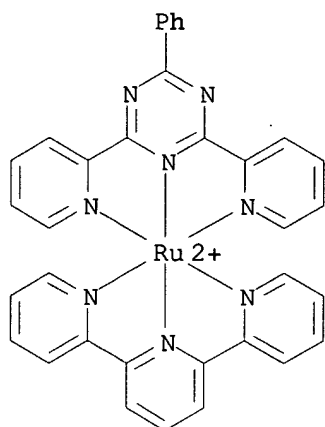
CRN 16919-18-9

CMF F6 P

CCI CCS

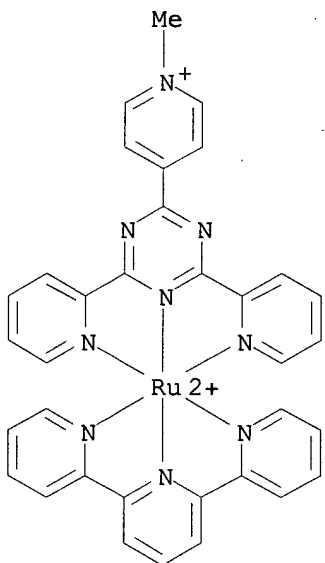


IT 461388-73-8P 461388-75-0P
 (preparation, cyclic voltammetry and luminescence)
 RN 461388-73-8 HCAPLUS
 CN Ruthenium(2+), [2-phenyl-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN5] (2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



RN 461388-75-0 HCAPLUS

CN Ruthenium(3+), [4-[4,6-di(2-pyridinyl-κN)-1,3,5-triazin-2-yl-κN5]-1-methylpyridinium] (2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)

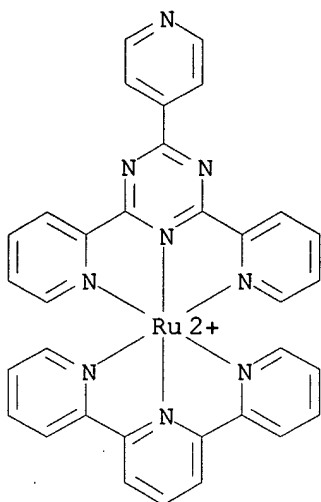


IT 461388-74-9P

(preparation, pyridyl methylation, cyclic voltammetry and luminescence)

RN 461388-74-9 HCAPLUS

CN Ruthenium(2+), [2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1] (2,2':6',2''-terpyridine-κN1,κN1',κN1'')-, (OC-6-23)- (9CI) (CA INDEX NAME)



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 28, 72, 73, 75

IT Luminescence
Oxidation, electrochemical
Redox potential
Reduction, electrochemical
(of ruthenium pyridyltriazine terpyridine complexes)

IT 461388-77-2P
(preparation and crystal structure)

IT 461388-73-8P 461388-75-0P
(preparation, cyclic voltammetry and luminescence)

IT 461388-74-9P
(preparation, pyridyl methylation, cyclic voltammetry and luminescence)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 12 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:175825 HCAPLUS

DOCUMENT NUMBER: 137:118494

TITLE: Synthetic, spectral and structural aspects of some mono- and binuclear (homo/hetero) Ru(II) hydrido carbonyl complexes

AUTHOR(S): Chandra, Manish; Sahay, Abhaya Nand; Pandey, Daya Shankar; Puerta, M. Carmen; Valerga, Pedro.

CORPORATE SOURCE: Department of Chemistry, Awadhesh Pratap Singh University, Rewa, M.P., 486 003, India

SOURCE: Journal of Organometallic Chemistry (2002), 648(1-2), 39-48
CODEN: JORCAI; ISSN: 0022-328X

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:118494

AB Reactions of the poly-pyridyl bridging ligand 2,4,6-tris(2-pyridyl)-1,3,5-triazine, 2,3-bis(2-pyridyl)pyrazine and 3,6-bis(2-pyridyl)-1,2,4,5-tetrazine (referred hereafter as tptz,

bppz and bptz, resp.) with $[\text{RuH}(\text{CO})\text{Cl}(\text{PPh}_3)_3]$ in methanol, gave highly stable cationic complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{L})]^+$. Further, mononuclear $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})]\text{PF}_6$ reacted with K_2PtCl_4 , $[\text{PdCl}_2(\text{benzonitrile})_2]$, $[\{\text{Ru}(\eta^6\text{-C}_{10}\text{H}_{14})(\mu\text{-Cl})\text{Cl}\}_2]$, $[\{\text{Ru}(\eta^6\text{-C}_6\text{Me}_6)(\mu\text{-Cl})\text{Cl}\}_2]$, $[\text{RuCl}(\eta^5\text{-C}_5\text{H}_5)(\text{PPh}_3)_2]$ and $[\{\text{Rh}(\eta^5\text{-C}_5\text{Me}_5)(\mu\text{-Cl})\text{Cl}\}_2]$ in methanol under refluxing conditions to give bppz bridged binuclear complexes $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})\text{PtCl}_2]\text{PF}_6$, $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})\text{PdCl}_2]\text{PF}_6$, $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})(\eta^6\text{-C}_{10}\text{H}_{14})\text{RuCl}](\text{PF}_6)_2$, $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})(\eta^6\text{-C}_6\text{Me}_6)\text{Cl}_2\text{Ru}](\text{PF}_6)_2$, $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})(\eta^5\text{-C}_5\text{H}_5)(\text{PPh}_3)\text{Ru}](\text{PF}_6)_2$ and $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{bppz})\text{Rh}(\eta^5\text{-C}_5\text{Me}_5)\text{Cl}](\text{PF}_6)_2$ in quant. yield.

The reaction products were characterized by elemental analyses, IR, ^1H -, ^1H - ^1H -COSY, ^{13}C -, ^{31}P -NMR, ESMS, FAB mass spectroscopy, electronic spectra and cyclic voltammetry. The mol. structure of the representative mononuclear complex $[\text{RuH}(\text{CO})(\text{PPh}_3)_2(\text{tptz})]\text{BF}_4$ was confirmed by x-ray crystallog. Crystal structure determination revealed η^2 -coordination of the ligand tptz with the metal center. Crystal data: monoclinic, space group $\text{P}2_1/\text{n}$, a 17.810(6), b 22.233(9), c 12.156(4) Å, β 90.06(3)°, Z = 4, R = 0.078.

IT 442848-09-1P

(preparation, crystal structure and electrochem. oxidation and reduction)

RN 442848-09-1 HCAPLUS

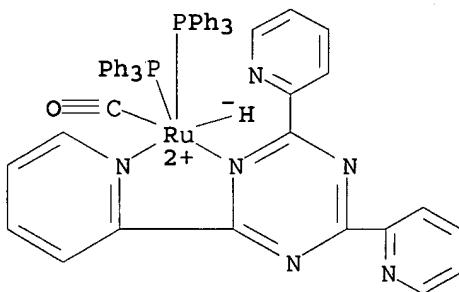
CN Ruthenium(1+), carbonylhydro[2-(2-pyridinyl- κN)-4,6-di-2-pyridinyl-1,3,5-triazine- $\kappa\text{N}1$]bis(triphenylphosphine)-, (OC-6-15)-, tetrafluoroborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 442848-08-0

CMF C55 H43 N6 O P2 Ru

CCI CCS

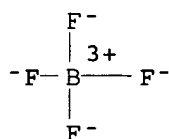


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 29, 72, 75

IT Oxidation, electrochemical

Oxidation potential

Reduction, electrochemical

Reduction potential

(of ruthenium carbonyl hydrido phosphine tris(pyridyl)triazine, bis(pyridyl)pyrazine and bis(pyridyl)tetrazine complexes)

IT 442848-12-6P 442848-17-1P 442848-29-5P

(preparation and electrochem. **oxidation** and reduction)

IT 442848-09-1P

(preparation, crystal structure and electrochem. **oxidation** and reduction)

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 13 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:168930 HCAPLUS

DOCUMENT NUMBER: 132:224425

TITLE: Production of hydrogen peroxide from oxygen and alcohols, **catalyzed** by palladium complexes

AUTHOR(S): Bortolo, R.; Bianchi, D.; D'Aloisio, R.; Querci, C.; Ricci, M.

CORPORATE SOURCE: EniChem, Centro Ricerche Novara 'Istituto G. Donegani', Novara, I-28100, Italy

SOURCE: Journal of Molecular Catalysis A: Chemical (2000), 153(1-2), 25-29
CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

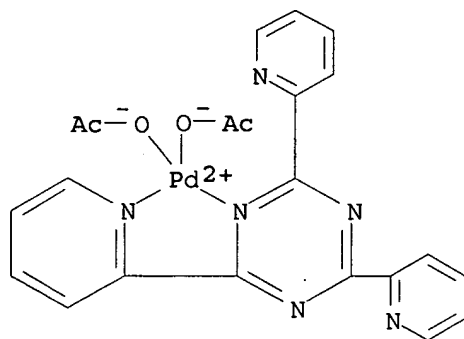
AB Production of hydrogen peroxide has been achieved by the **catalytic oxidation** of primary and secondary alcs. with oxygen, in presence of a palladium **catalyst**. The **catalyst** was a complex of palladium with a bidentate nitrogen ligand and an acid cocatalyst. 2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline was selected as the most efficient ligand, and perfluorooctanoic acid gave the best results as cocatalyst. In this work the effects of nitrogen ligands, acid cocatalyst, alcs., as far as temperature and oxygen pressure are concerned, are investigated.

IT 260963-89-1

(hydrogen peroxide production from oxygen and alcs. using palladium complex **catalysts**)

RN 260963-89-1 HCAPLUS

CN Palladium, bis(acetato-κO) [2-(2-pyridinyl-κN)-4,6-di-2-pyridinyl-1,3,5-triazine-κN1]-, (SP-4-3)- (9CI) (CA INDEX NAME)



- CC 49-8 (Industrial Inorganic Chemicals)
Section cross-reference(s): 45, 51, 67
- ST hydrogen peroxide prodn alc oxidn palladium complex
catalyst; alc oxidn catalyst palladium
complex H2O2 prodn
- IT **Oxidation**
Oxidation catalysts
(hydrogen peroxide production from oxygen and alcs. using palladium
complex catalysts)
- IT Aldehydes, processes
Ketones, processes
(hydrogen peroxide production from oxygen and alcs. using palladium
complex catalysts)
- IT Alcohols, reactions
(primary; hydrogen peroxide production from oxygen and alcs. using
palladium complex catalysts)
- IT Alcohols, reactions
(secondary; hydrogen peroxide production from oxygen and alcs.
using palladium complex catalysts)
- IT 64-19-7, Acetic acid, uses 76-05-1, Perfluoroacetic acid, uses
335-67-1, Perfluorooctanoic acid 3375-31-3D, Palladium
diacetate, complexes 7440-05-3D, Palladium, complexes, uses
7647-01-0, Hydrogen chloride, uses 7664-38-2, Phosphoric acid,
uses 7664-93-9, Sulfuric acid, uses 35679-81-3 95246-09-6
152506-86-0 152506-88-2 260963-87-9 260963-88-0
260963-89-1
(hydrogen peroxide production from oxygen and alcs. using palladium
complex catalysts)
- IT 7722-84-1P, Hydrogen peroxide, preparation
(hydrogen peroxide production from oxygen and alcs. using palladium
complex catalysts)
- IT 67-63-0, 2-Propanol, reactions 71-41-0, 1-Pentanol, reactions
93-54-9, 1-Phenyl-1-propanol 98-85-1, 1-Phenylethanol
100-51-6, Benzyl alcohol, reactions 104-76-7, 2-Ethylhexanol
105-13-5, 4-Methoxybenzyl alcohol 108-93-0, Cyclohexanol,
reactions 111-87-5, 1-Octanol, reactions 123-96-6, 2-Octanol
698-87-3, 1-Phenyl-2-propanol 7782-44-7, Oxygen, reactions
(hydrogen peroxide production from oxygen and alcs. using palladium
complex catalysts)
- REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 14 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:794928 HCAPLUS
DOCUMENT NUMBER: 132:145749

TITLE: Metal-Assisted Unusual Hydroxylation at the Carbon Atom of the Triazine Ring in Dinuclear Ruthenium(II) and Osmium(II) Complexes Bridged by 2,4,6-Tris(2-pyridyl)-1,3,5-triazine: Synthesis, Structural Characterization, Stereochemistry, and Electrochemical Studies

AUTHOR(S): Paul, Parimal; Tyagi, Beena; Bilakhiya, Anvarhusen K.; Dastidar, Parthasarathi; Suresh, Eringathodi

CORPORATE SOURCE: Discipline of Silicates and Catalysis, Central Salt and Marine Chemicals Research Institute G. B. Marg, Bhavnagar, 364 002, India

SOURCE: Inorganic Chemistry (2000), 39(1), 14-22
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

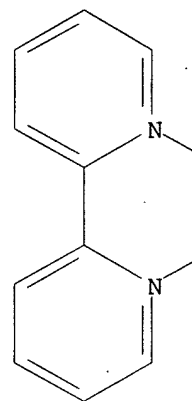
AB The reaction of cis-[M(bpy)2Cl2] (M = Ru(II), and Os(II)) with 2,4,6-tris(2-pyridyl)-1,3,5-triazine (tptz) in refluxing EtOH-H2O gave dinuclear $[M(bpy)_2]_2(tptz-OH)(PF_6)_3 \cdot nH_2O$ (n = 1 for Ru and n = 0 for Os). In this reaction an unusual metal-induced hydroxylation at the C atom of the triazine ring of bridged tptz occurred. However, hydroxylation did not occur in the corresponding mononuclear complexes under similar reaction conditions. A comparative study revealed that sufficient electrophilicity on the C atom and free movement of the attached pyridyl ring promoted the hydroxylation reaction. The hydroxylated dinuclear complexes exist in two stereoisomeric forms, a rac form ($\Delta\Delta/\Lambda\Lambda$) and a meso form ($\Delta\Lambda/\Lambda\Delta$). Both diastereoisomers were isolated in pure form and characterized. The mol. structures of the rac form of Ru(II) complex (3-II) and meso form of the Os(II) complex (4-I) were established by single-crystal x-ray studies. Crystal data: complex 3-II, monoclinic, space group C2/c, a 24.584(7), b 14.309(4), c 41.044(13) Å, β 92.84(2)°, Z = 8, R = 0.179, wR2 = 0.479; complex 4-I, triclinic, space group P.hivin.1, a 13.444(7), b 14.576(5), c 19.641(7) Å, α 98.21(3), β 101.67(4), γ 105.80(4)°, Z = 2, R = 0.093, wR2 = 0.279. The poor data quality of 3-II did not allow anisotropic refinement of nonhydrogen atoms except Ru and P. A PLUTO drawing of this compound is given only to support the mol. structure. ¹H NMR data were used to characterize the diastereoisomers. The dinuclear complexes exhibit unusual electrochem. behavior; cathodic shifts of the metal-centered **oxidns.** and ligand-based first reduction compared to mononuclear complexes were observed. There is a splitting in the metal-centered **oxidation** potentials, indicating strong electronic communication between the metal centers. Comproportionation consts. (Kcom) of the mixed-valence species were calculated; the values are in the range 6.03 + 104 to 4.7 + 106. Apparently a metal-metal interaction occurred by an electron-transfer mode across the low-lying π^* orbital of the bridged tptz.

IT 256635-39-9 256635-40-2 256635-41-3
(electrochem. formation and comproportionation kinetics of)

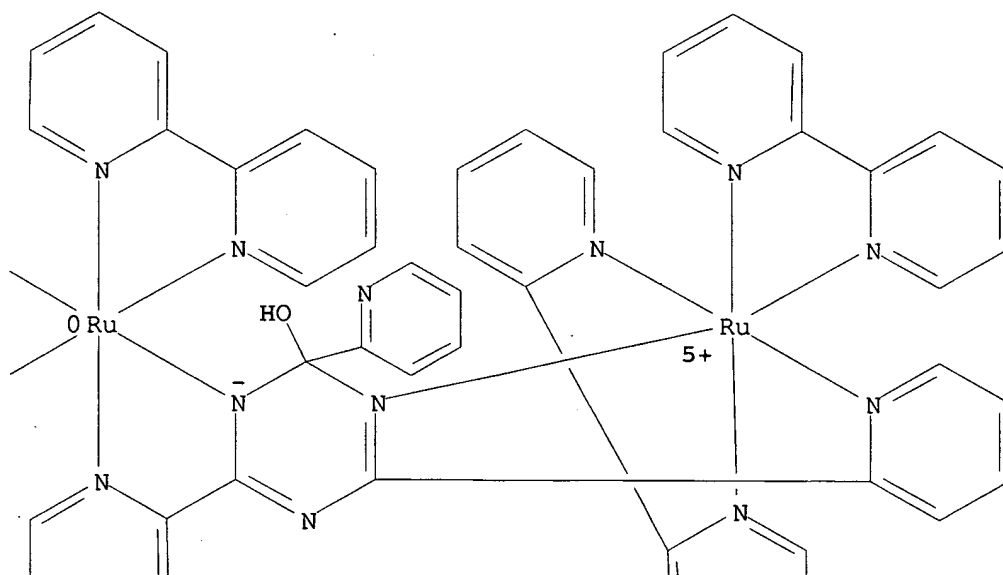
RN 256635-39-9 HCAPLUS

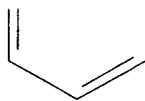
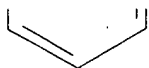
CN Ruthenium(4+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazin-2-olato- κ N1: κ N3]]di-, stereoisomer (9CI) (CA INDEX NAME)

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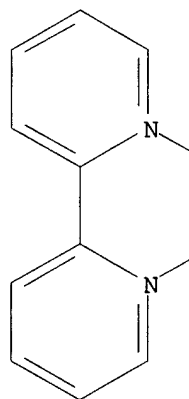




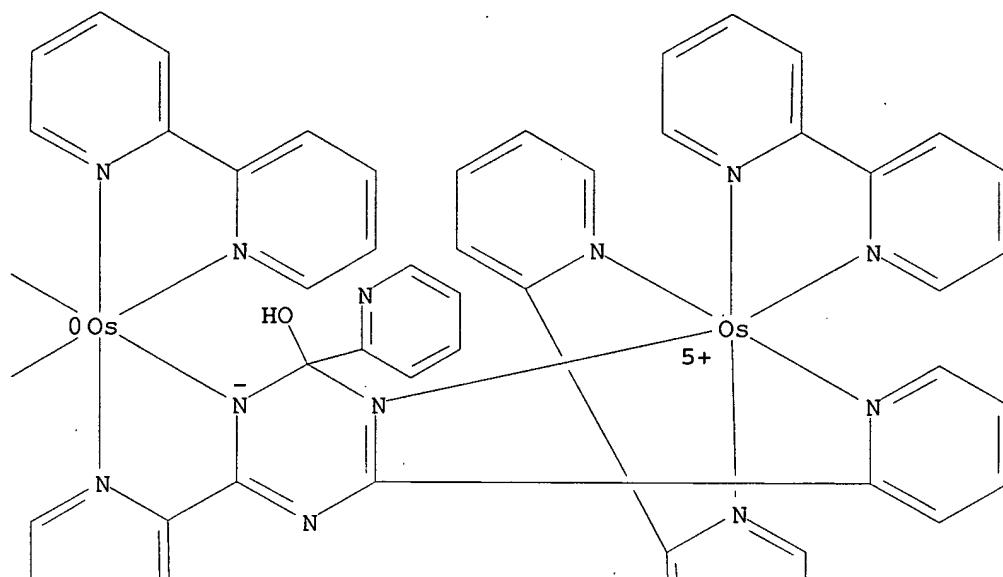
PAGE 2-B

RN 256635-40-2 HCAPLUS
CN Osmium(4+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -
[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-
triazin-2-olato- κ N1: κ N3]]di-, stereoisomer (9CI) (CA
INDEX NAME)

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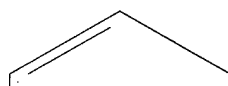
PAGE 1-B



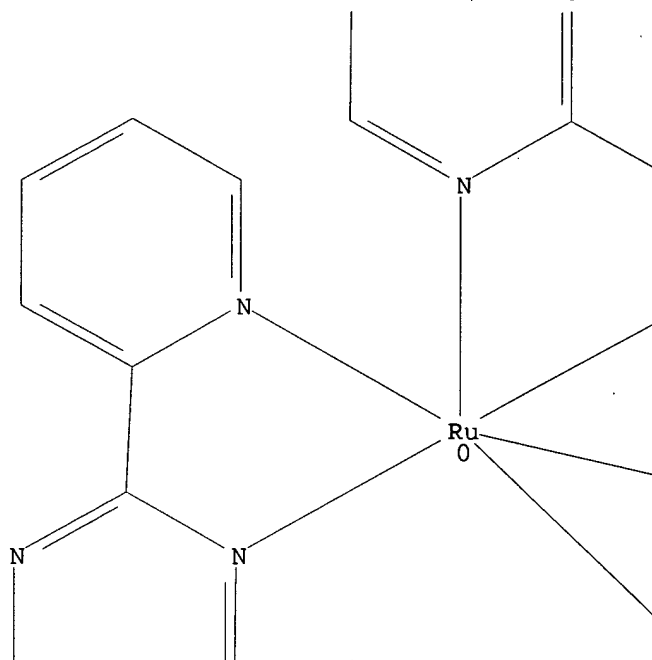
PAGE 2-B

RN 256635-41-3 HCAPLUS
 CN Ruthenium(5+), bis(2,2'-bipyridine-κN1,κN1')(2,2':6',2''-terpyridine-κN1,κN1',κN1'') [μ-[2,4,6-tri(2-pyridinyl-κN)-1,3,5-triazine-κN1:κN3]]di- (9CI)
 (CA INDEX NAME)

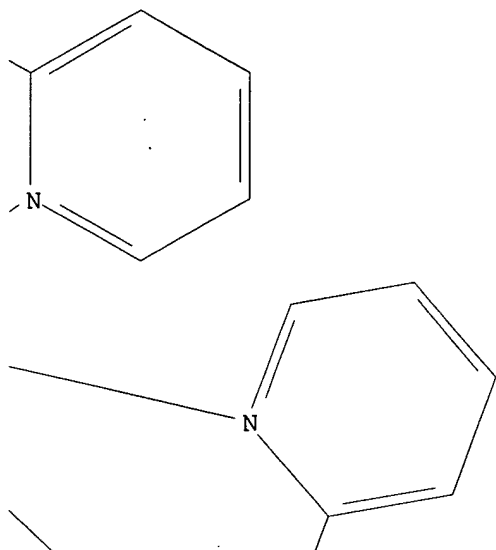
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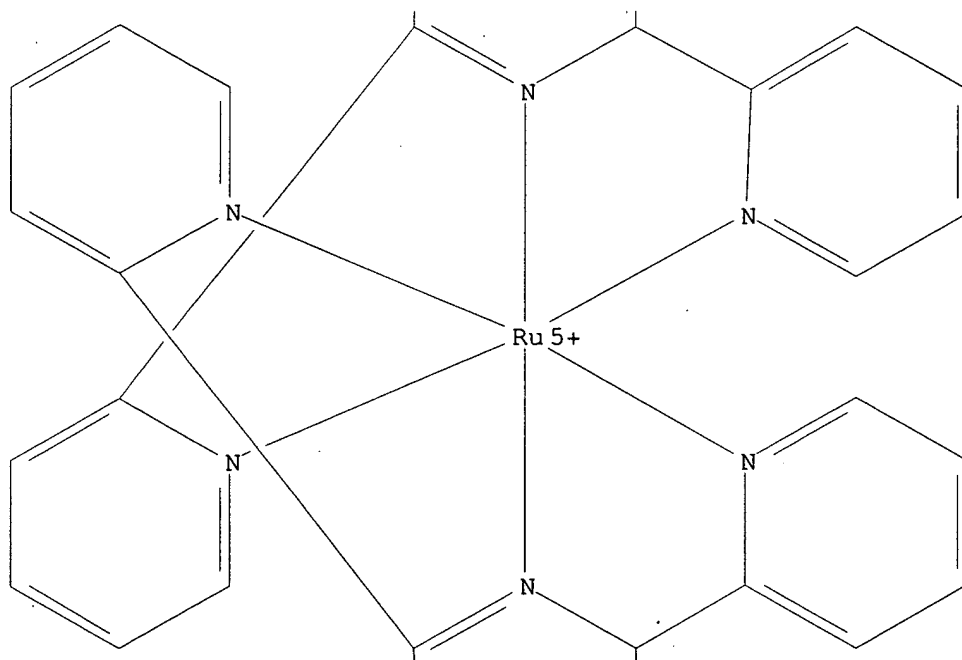
PAGE 2-A



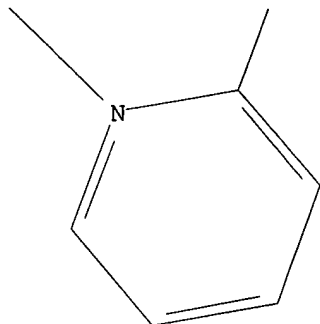
PAGE 2-B



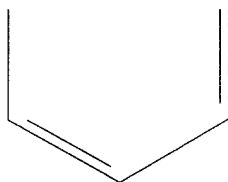
PAGE 3-A



PAGE 3-B

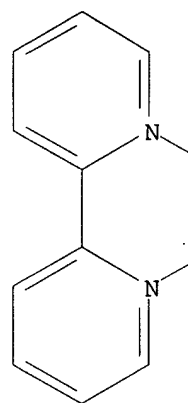


PAGE 4-A

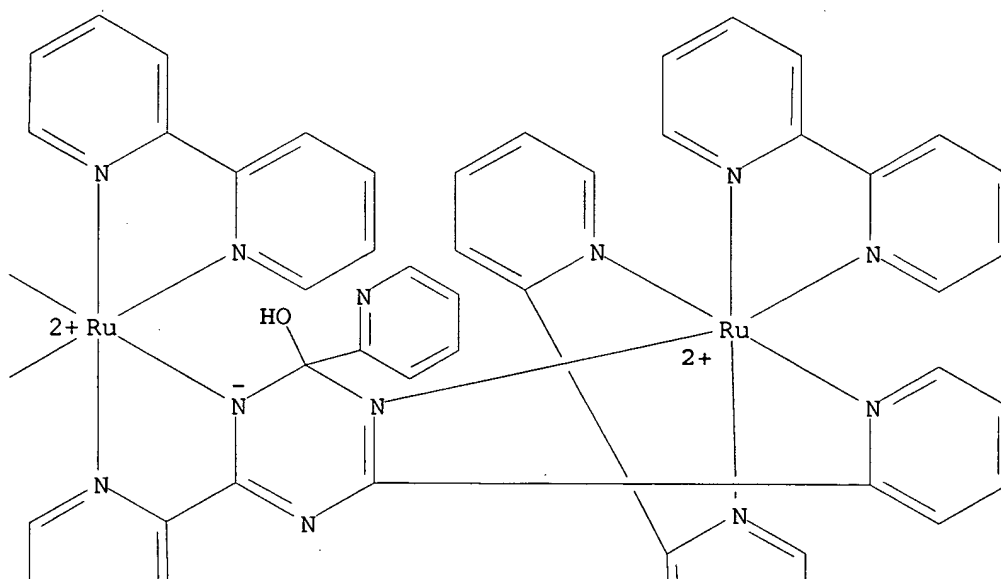


IT 256931-71-2P
(preparation and crystal structure of)
RN 256931-71-2 HCAPLUS
CN Ruthenium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -
[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-
triazin-2-olato- κ N1: κ N3]]di-, stereoisomer,
tris[hexafluorophosphate(1-)], monohydrate (9CI) (CA INDEX NAME)
CM 1
CRN 256635-36-6
CMF C58 H45 N14 O Ru2 . 3 F6 P
CM 2
CRN 256635-35-5
CMF C58 H45 N14 O Ru2
CCI CCS

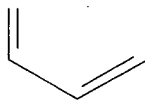
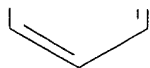
PAGE 1-A



PAGE 1-B



PAGE 2-B

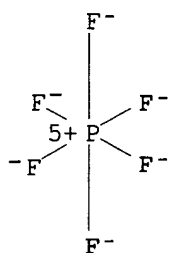


CM 3

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 134388-08-2P 256635-34-4P

(preparation and oxidation and reduction potentials of)

RN 134388-08-2 HCAPLUS

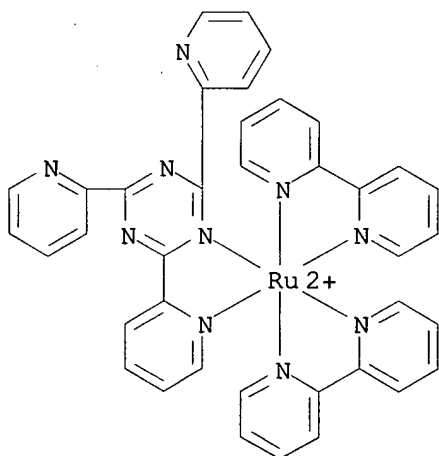
CN Ruthenium(2+), bis(2,2'-bipyridine-κN1,κN1') [2-(2-pyridinyl-κN)-4,6-di-2-pyridinyl-1,3,5-triazine-κN1]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

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CRN 134388-07-1

CMF C38 H28 N10 Ru

CCI CCS

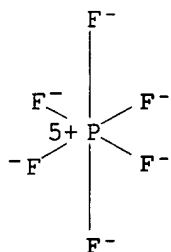


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 256635-34-4 HCAPLUS

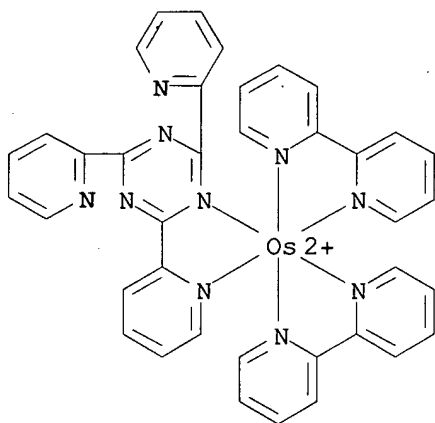
CN Osmium(2+), bis(2,2'-bipyridine- κ N1, κ N1') [2-(2-pyridinyl- κ N)-4,6-di-2-pyridinyl-1,3,5-triazine- κ N1]-, (OC-6-33)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 256635-33-3

CMF C38 H28 N10 Os

CCI CCS

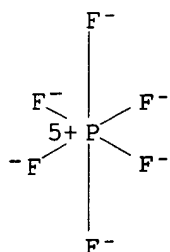


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 256635-38-8P
 (preparation, crystal structure, **oxidation** and reduction potentials, electrochem. **oxidation**, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)

RN 256635-38-8 HCAPLUS

CN Osmium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-triazin-2-olato- κ N1: κ N3]]di-, stereoisomer, tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

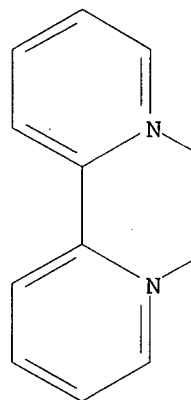
CM 1

CRN 256635-37-7

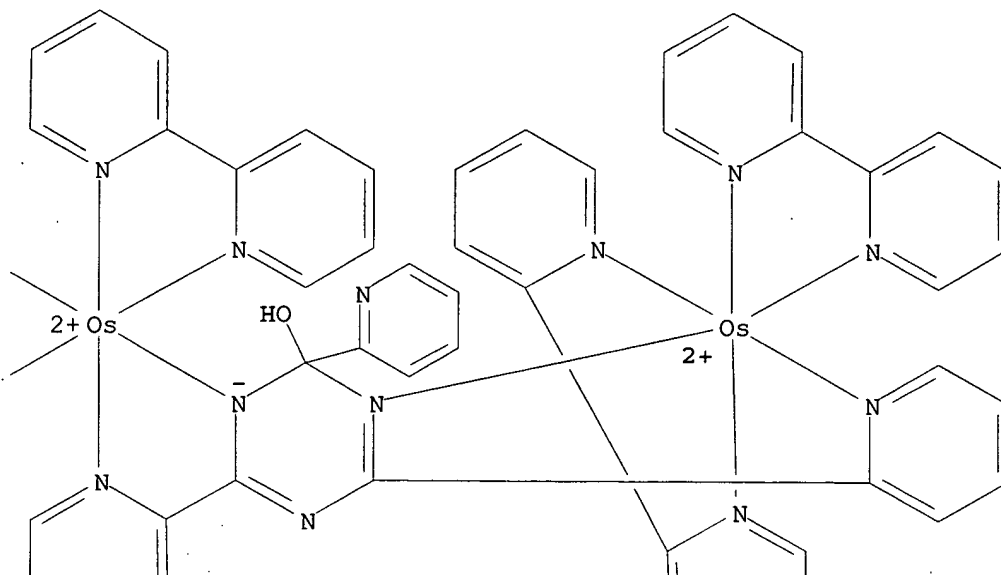
CMF C58 H45 N14 O Os2

CCI CCS

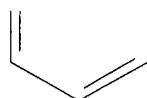
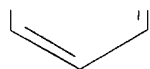
PAGE 1-A



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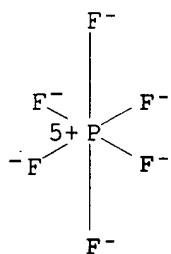


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 256934-37-9P

(preparation, mol. structure, **oxidation** and reduction potentials, electrochem. **oxidation**, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)

RN 256934-37-9 HCAPLUS
CN Ruthenium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -
[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-
triazin-2-olato- κ N1: κ N3]]di-, stereoisomer,
tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

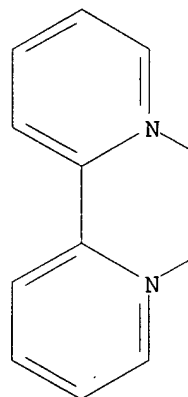
CM 1

CRN 256934-36-8

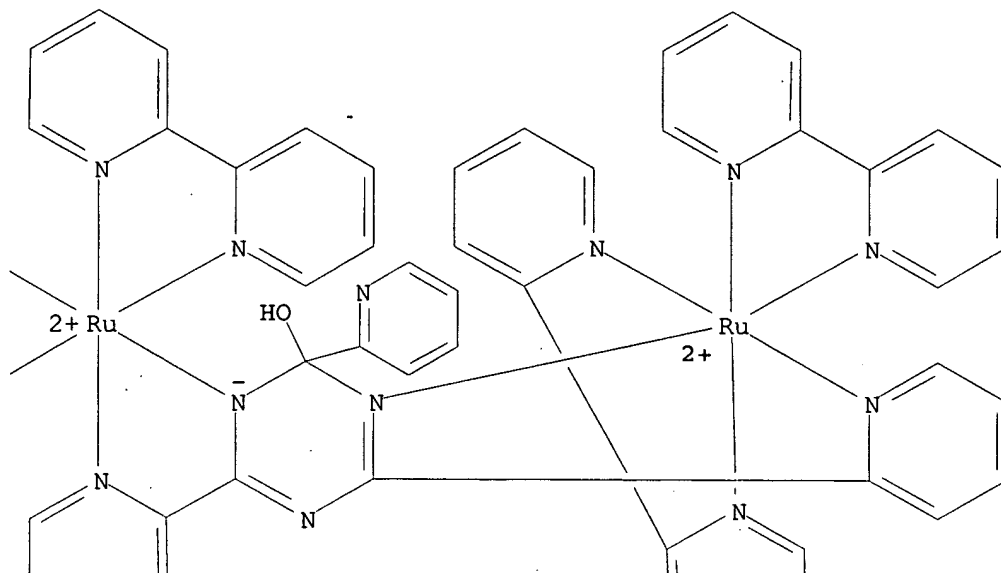
CMF C58 H45 N14 O Ru2

CCI CCS

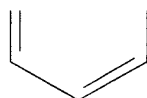
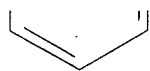
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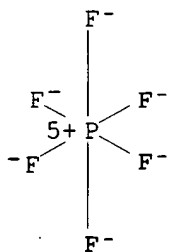


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 134388-10-6P

(preparation, oxidation and reduction potentials, and
electrochem. oxidation)

RN 134388-10-6 HCAPLUS

CN Ruthenium(4+), bis(2,2'-bipyridine- κ N1, κ N1') (2,2':6',2
'-terpyridine- κ N1, κ N1', κ N1'') [μ -[2,4,6-tri(2-
pyridinyl- κ N)-1,3,5-triazine- κ N1: κ N3]]di-,
tetrakis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

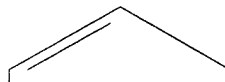
CM 1

CRN 134388-09-3

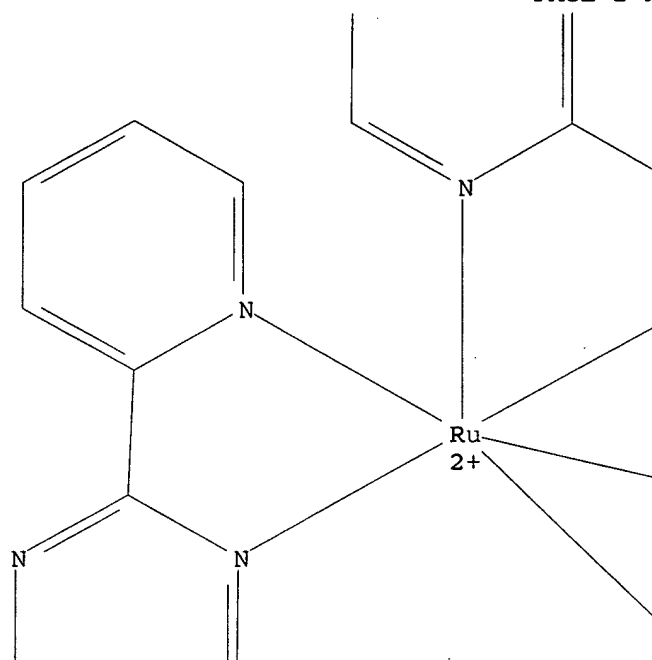
CMF C53 H39 N13 Ru2

CCI CCS

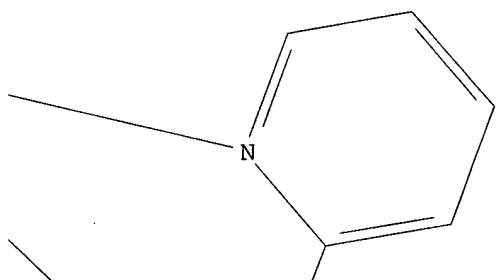
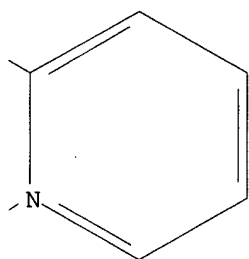
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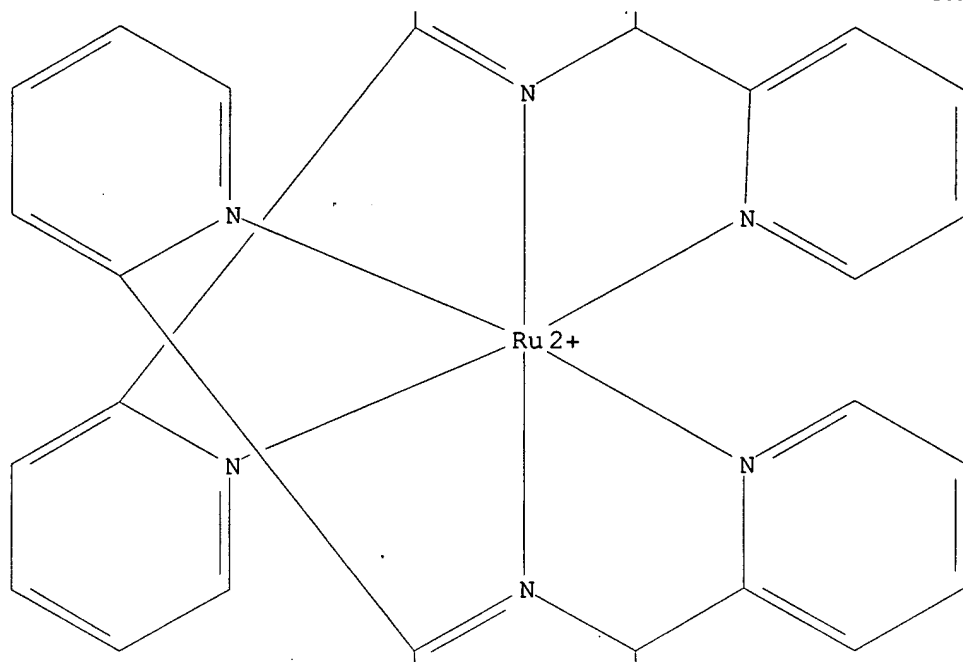
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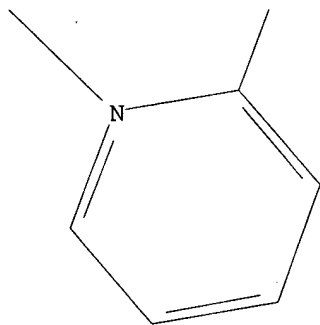
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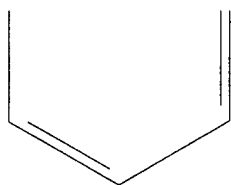
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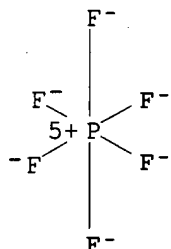


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CM 2

CRN 16919-18-9
 CMF F6 P
 CCI CCS

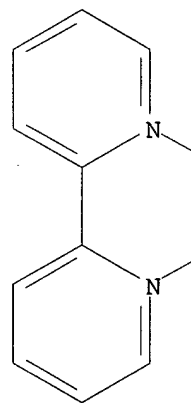


IT 256635-36-6P 256933-98-9P
 (preparation, **oxidation** and reduction potentials, electrochem.
oxidation, UV-visible and proton NMR spectra, and
 mechanistic aspects of ligand hydroxylation)
 RN 256635-36-6 HCAPLUS
 CN Ruthenium(3+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -
 [1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl- κ N)-1,3,5-
 triazin-2-olato- κ N1: κ N3]]di-, stereoisomer,
 tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

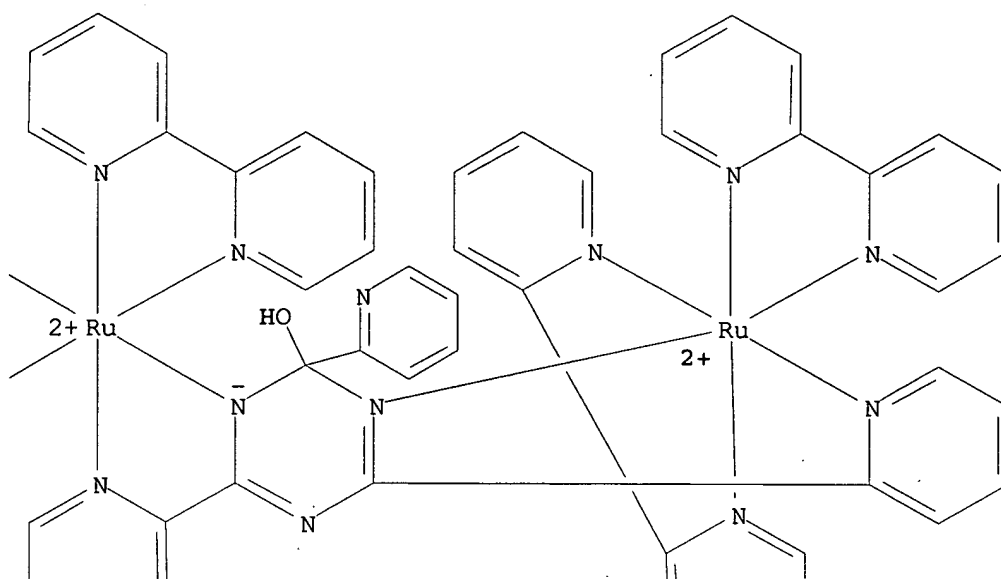
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CRN 256635-35-5
 CMF C58 H45 N14 O Ru2
 CCI CCS

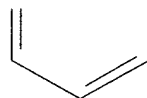
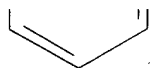
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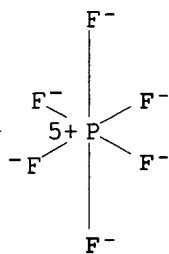


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 256933-98-9 HCAPLUS

CN Osmium(3+), tetrakis(2,2'-bipyridine-κN1,κN1') [μ-[1,2-dihydro-2-(2-pyridinyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazin-2-olato-κN1:κN3]]di-, stereoisomer, tris[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

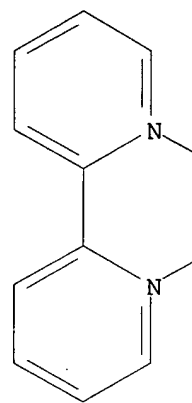
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CRN 256933-97-8

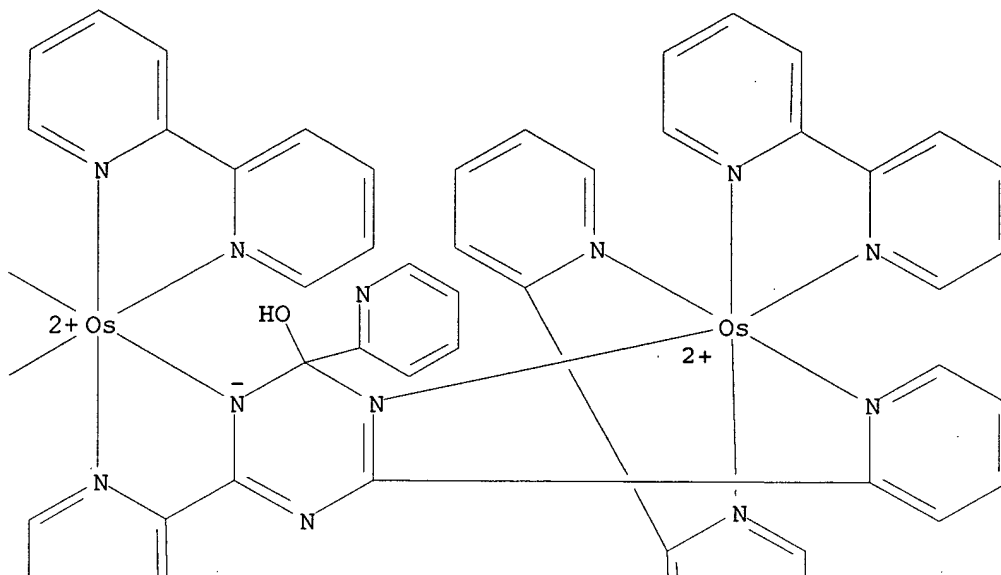
CMF C58 H45 N14 O Os2

CCI CCS

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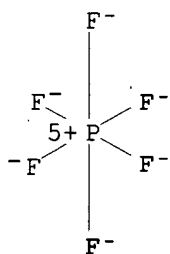
PAGE 2-B

CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



IT 175918-24-8

(reformulation as dinuclear ruthenium complex containing
hydroxylated tris(pyridyl)triazine ligand)

RN 175918-24-8 HCAPLUS

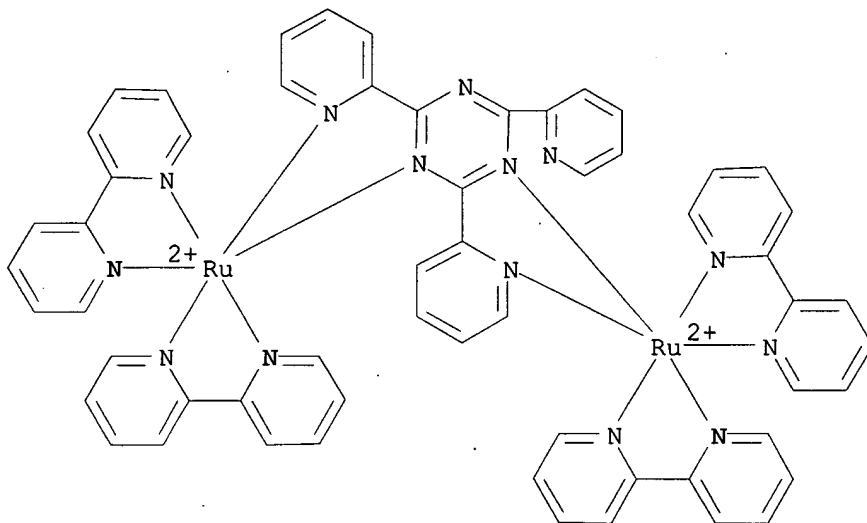
CN Ruthenium(4+), tetrakis(2,2'-bipyridine- κ N1, κ N1') [μ -[2,4-di(2-pyridinyl- κ N)-6-(2-pyridinyl)-1,3,5-triazine- κ N1: κ N3]]di-, tetrakis[hexafluorophosphate(1-)] (9CI)
(CA INDEX NAME)

CM 1

CRN 175918-23-7

CMF C58 H44 N14 Ru2

CCI CCS

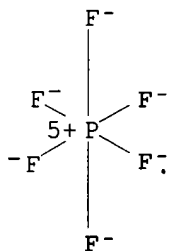


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 72, 73, 75

IT **Oxidation potential**

(of ruthenium and osmium dinuclear complexes of trispyridyltriazine ligand C-hydroxylated on triazine ring, and mononuclear analogs)

IT 256635-39-9 256635-40-2 256635-41-3

(electrochem. formation and comproportionation kinetics of)

- IT 256931-71-2P
(preparation and crystal structure of)
- IT 134388-08-2P 256635-34-4P
(preparation and oxidation and reduction potentials of)
- IT 256635-38-8P
(preparation, crystal structure, oxidation and reduction potentials, electrochem. oxidation, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)
- IT 256934-37-9P
(preparation, mol. structure, oxidation and reduction potentials, electrochem. oxidation, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)
- IT 134388-10-6P
(preparation, oxidation and reduction potentials, and electrochem. oxidation)
- IT 256635-36-6P 256933-98-9P
(preparation, oxidation and reduction potentials, electrochem. oxidation, UV-visible and proton NMR spectra, and mechanistic aspects of ligand hydroxylation)
- IT 175918-24-8
(reformulation as dinuclear ruthenium complex containing hydroxylated tris(pyridyl)triazine ligand)

REFERENCE COUNT: 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 15 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:310425 HCAPLUS

DOCUMENT NUMBER: 131:38774

TITLE: Mononuclear and binuclear rhenium(I) carbonyl complexes of 2,4,6-tris(2-pyridyl)-1,3,5-triazine (TPT), $[\{\text{ReCl}(\text{CO})_3\}_n(\text{TPT})]$ ($n = 1, 2$), and the formation of mixed-metal compounds with Re-TPT-M ($M = \text{MnII}, \text{CoII}, \text{CuII}$) bonds

AUTHOR(S): Granifo, Juan

CORPORATE SOURCE: Departamento de Ciencias Quimicas, Facultad de Ingenieria y Administracion, Universidad de La Frontera, Temuco, 54-D, Chile

SOURCE: Polyhedron (1999), 18(7), 1061-1066

CODEN: PLYHDE; ISSN: 0277-5387

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The novel mononuclear complex $[\text{ReCl}(\text{CO})_3(\text{TPT})]$ was isolated where the triazine ligand is acting in a bidentate chelate mode. The metalloligand properties of this Re(I) complex were demonstrated when it reacts bidentately either with the $\{\text{ReCl}(\text{CO})_3\}$ fragment or with the $[\text{M}(\text{hfac})_2]$ ($M = \text{Mn}, \text{Co}, \text{Cu}$; hfac = hexafluoroacetylacetonate ion) complexes, producing the homobinuclear $[\{\text{ReCl}(\text{CO})_3\}_2(\text{TPT})]$ and the heterobimetallic $[(\text{CO})_3\text{ClRe}(\text{TPT})\text{M}(\text{hfac})_2]$ substances, resp. In MeOH solution the binuclear Re-TPT-Re complex forms the $[\{\text{ReCl}(\text{CO})_3\}_2(\text{TPT})] \cdot \text{MeOH}$ complex, where a methoxide group seems to be interacting with the acidic triazine ring and the N atom of the uncoordinated pyridyl group is protonated. In general, the studies in solution of the dirhenium Re-TPT-Re complex show evidence of its interaction with the solvent mols. apparently in an acid-base fashion. However, the mixed-metal Re-TPT-M derivs. show dissociation reactions in solution generating the parent

mononuclear $[\text{ReCl}(\text{CO})_3(\text{TPT})]$ compound and the $[\text{M}(\text{hfac})_2]$ complexes. The systems under study were characterized through IR, ^1H NMR and electronic spectroscopy, electrochem. and magnetic moment measurements.

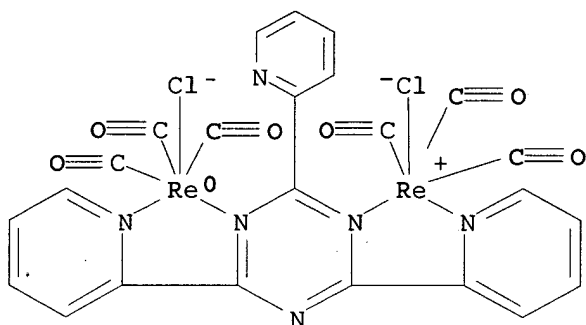
IT 226896-11-3 226896-12-4 226896-13-5

226896-14-6 226896-15-7

(elec. potential of couple containing)

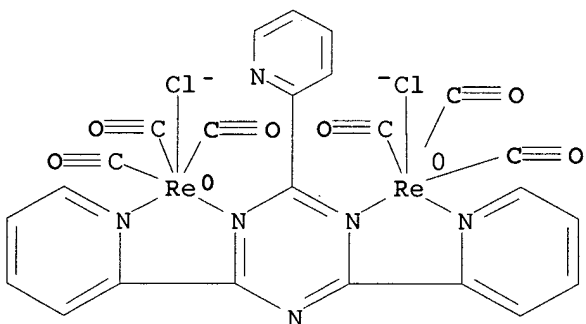
RN 226896-11-3 HCAPLUS

CN Rhenate(1-), hexacarbonyldichloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κN)-1,3,5-triazine- $\kappa\text{N1}:\kappa\text{N3}$]]di-, stereoisomer (9CI) (CA INDEX NAME)



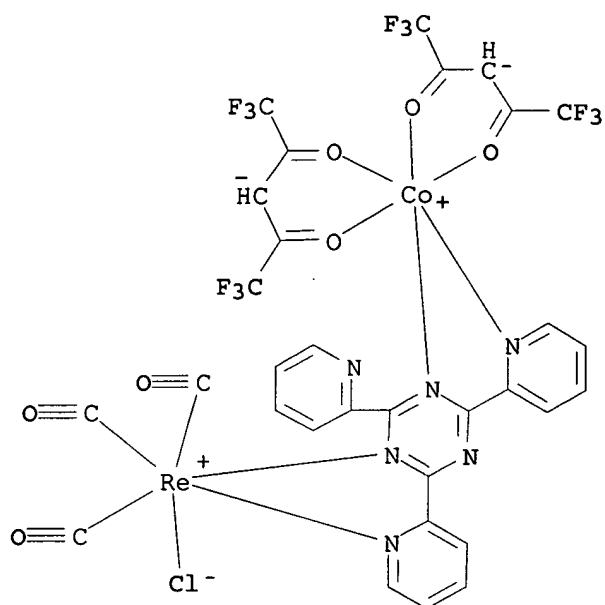
RN 226896-12-4 HCAPLUS

CN Rhenate(2-), hexacarbonyldichloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κN)-1,3,5-triazine- $\kappa\text{N1}:\kappa\text{N3}$]]di-, stereoisomer (9CI) (CA INDEX NAME)



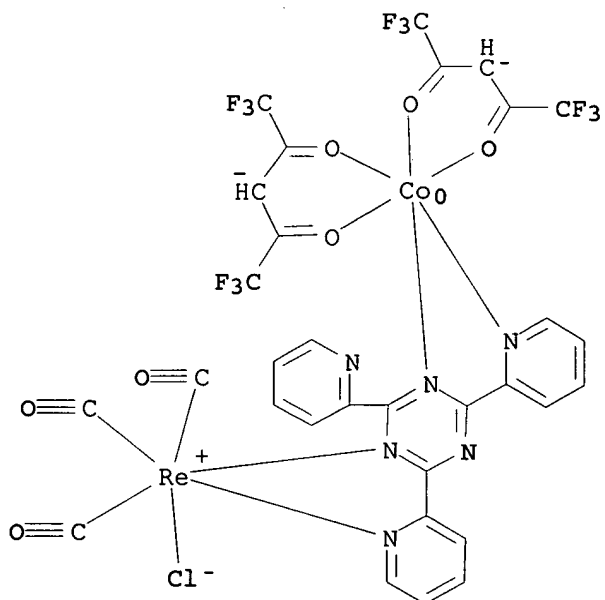
RN 226896-13-5 HCAPLUS

CN Rhenate(1-), [bis(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- $\kappa\text{O},\kappa\text{O}'$)cobaltate]tricarbonylchloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κN)-1,3,5-triazine- $\kappa\text{N1}:\kappa\text{N3}$]]-, stereoisomer (9CI) (CA INDEX NAME)



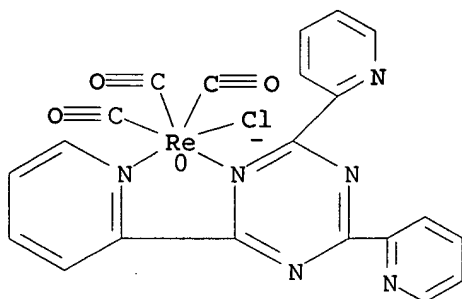
RN 226896-14-6 HCAPLUS

CN Rhenate(2-), [bis(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato-κO,κO')cobaltate]tricarbonylchloro[μ-[2-(2-pyridinyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1:κN3]]-, stereoisomer (9CI) (CA INDEX NAME)



RN 226896-15-7 HCAPLUS

CN Rhenate(1-), tricarbonylchloro[6-(2-pyridinyl-κN)-2,4-di-2-pyridinyl-1,3,5-triazine-κN1]-, (OC-6-44)- (9CI) (CA INDEX NAME)

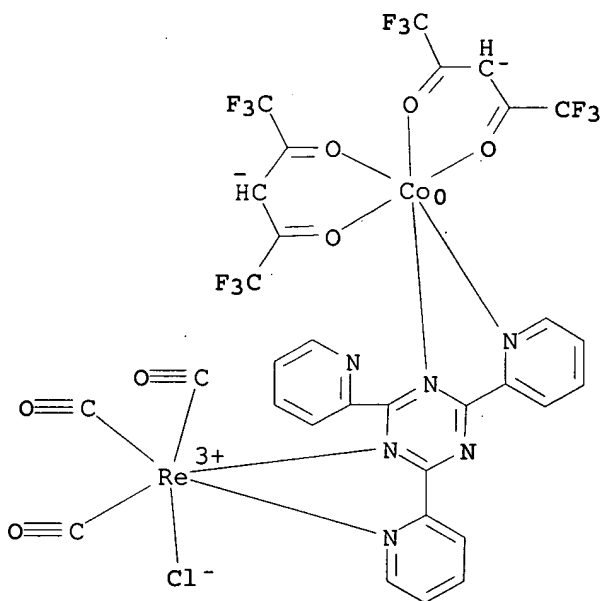


IT 226896-08-8P

(preparation and cyclic voltammetry)

RN 226896-08-8 HCAPLUS

CN Rhenium, [bis(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- $\kappa O, \kappa O'$)cobalt]tricarbonylchloro [μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κN)-1,3,5-triazine- $\kappa N1: \kappa N3$]]-, stereoisomer (9CI) (CA INDEX NAME)

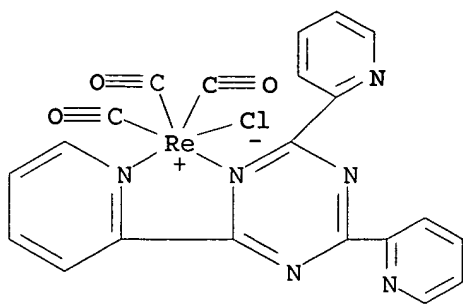


IT 226896-03-3P

(preparation and cyclic voltammetry and solvatochromism and reaction with rhenium carbonyl acetonitrile complex and transition metal hexafluoroacetylacetonate complexes)

RN 226896-03-3 HCAPLUS

CN Rhenium, tricarbonylchloro[6-(2-pyridinyl- κN)-2,4-di-2-pyridinyl-1,3,5-triazine- $\kappa N1$]-, (OC-6-44)- (9CI) (CA INDEX NAME)

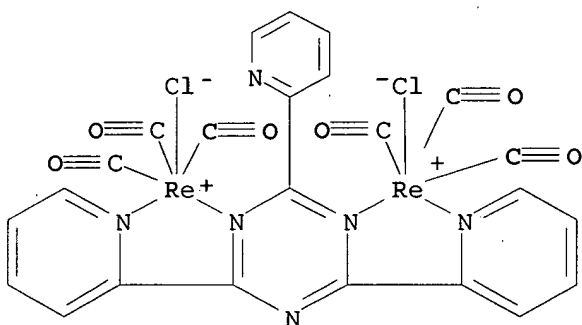


IT 226896-04-4P

(preparation and solvatochromism and cyclic voltammetry)

RN 226896-04-4 HCAPLUS

CN Rhenium, hexacarbonyldichloro[μ-[2-(2-pyridinyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1:κN3]]di-, stereoisomer (9CI) (CA INDEX NAME)

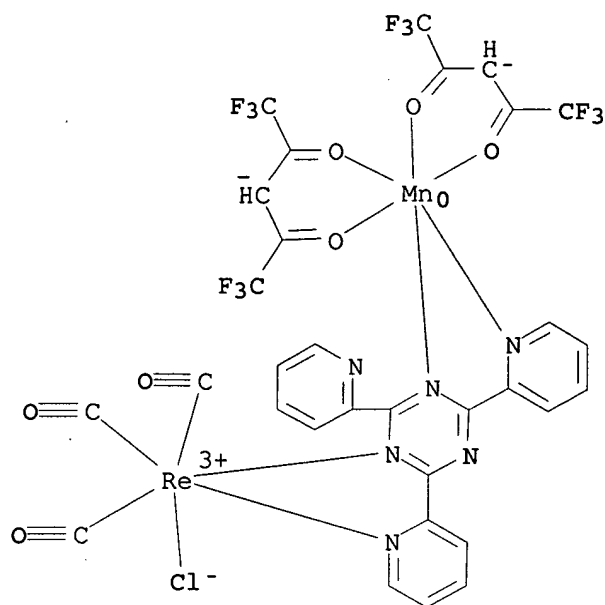


IT 226896-06-6P 226896-10-2P 226909-23-5P

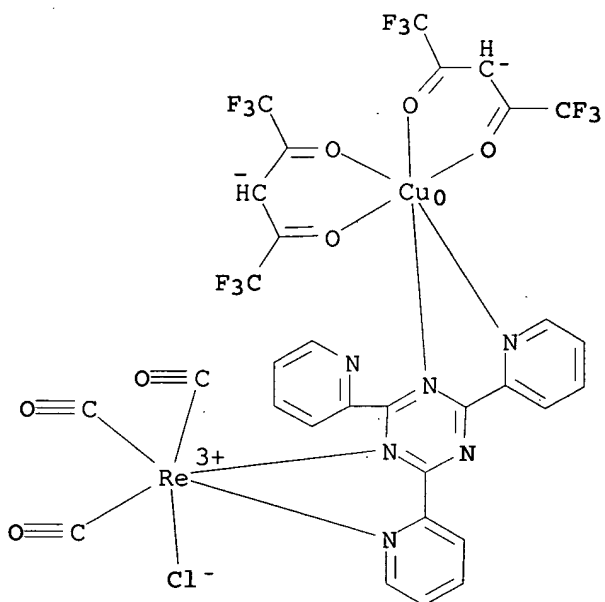
(preparation of)

RN 226896-06-6 HCAPLUS

CN Rhenium, [bis(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato-κO,κO')manganese]tricarbonylchloro[μ-[2-(2-pyridinyl)-4,6-di(2-pyridinyl-κN)-1,3,5-triazine-κN1:κN3]]-, stereoisomer (9CI) (CA INDEX NAME)



RN 226896-10-2 HCAPLUS
 CN Rhenium, [bis(1,1,1,5,5,5-hexafluoro-2,4-pentanedionato- $\kappa O, \kappa O'$)copper]tricarbonylchloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κN)-1,3,5-triazine- $\kappa N1: \kappa N3$]]-, stereoisomer (9CI) (CA INDEX NAME)



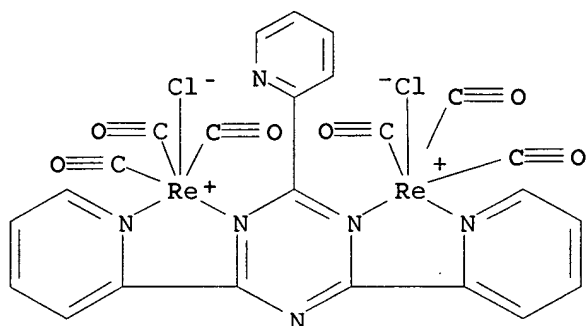
RN 226909-23-5 HCAPLUS
 CN Rhenium, hexacarbonyldichloro[μ -[2-(2-pyridinyl)-4,6-di(2-pyridinyl- κN)-1,3,5-triazine- $\kappa N1: \kappa N3$]]di-, stereoisomer, compd. with methanol (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 226896-04-4

CMF C24 H12 Cl2 N6 O6 Re2

CCI CCS



CM 2

CRN 67-56-1

CMF C H4 O

H₃C-OH

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 72, 73

IT Oxidation potential

Reduction potential

(of rhenium carbonyl tris(pyridyl)triazine complexes
with/without transition metal hexafluoroacetylacetonate)

IT 226896-11-3 226896-12-4 226896-13-5

226896-14-6 226896-15-7

(elec. potential of couple containing)

IT 226896-08-8P

(preparation and cyclic voltammetry)

IT 226896-03-3P

(preparation and cyclic voltammetry and solvatochromism and reaction
with rhenium carbonyl acetonitrile complex and transition metal
hexafluoroacetylacetonate complexes)

IT 226896-04-4P

(preparation and solvatochromism and cyclic voltammetry)

IT 226896-06-6P 226896-10-2P 226909-23-5P

(preparation of)

REFERENCE COUNT:

13

THERE ARE 13 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 16 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:636313 HCAPLUS

DOCUMENT NUMBER: 129:350143

TITLE: Synthesis and Characterization of Rhodium
Complexes Containing 2,4,6-Tris(2-pyridyl)-

1,3,5-triazine and Its Metal-Promoted
Hydrolytic Products: Potential Uses of the New
Complexes in Electrocatalytic Reduction of
Carbon Dioxide

AUTHOR(S): Paul, Parimal; Tyagi, Beena; Bilakhiya,
Anvarhusen K.; Bhadbhade, Mohan M.; Suresh,
Eringathodi; Ramachandraiah, G.

CORPORATE SOURCE: Disciplines of Silicates and Catalysis
Sophisticated Analytical Instruments
Laboratory and Discipline of Reactive
Polymers, Central Salt and Marine Chemicals
Research Institute, Bhavnagar, 364 002, India

SOURCE: Inorganic Chemistry (1998), 37(22), 5733-5742
CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The reaction of 2,4,6-tris(2-pyridyl)-1,3,5-triazine (tptz) with
RhCl₃·3H₂O was studied under different exptl. conditions.
This reaction in EtOH gave [Rh(tptz)Cl₃]·2H₂O (1), whereas
the bis-chelate complex [Rh(tptz)₂][ClO₄]₃·2H₂O (2) was
obtained in a two-step reaction in acetone in which the chlorides
from RhCl₃ were removed in using AgClO₄, followed by the addition of
tptz. 1 And 2, when refluxed in EtOH-H₂O (1:1), resulted in
metal-promoted hydrolysis of tptz to the bis(2-
pyridylcarbonyl)amide anion (bpca) and 2-picolinamide (pa),
yielding [Rh(bpca)(pa)Cl][PF₆]·H₂O (3) and
[Rh(bpca)₂][ClO₄] (6), resp. A mixed-ligand complex,
[Rh(bpca)(tpy)][PF₆]·2·MeCN (4), was obtained by the
reaction of either 1 with terpyridine (tpy) or [Rh(tpy)Cl₃] (5)
with tptz in EtOH-H₂O medium. Crystal data: 1, monoclinic, space
group P2₁/c, a 11.642(2), b 7.302(2), c 24.332(3) Å, β
96.420(10)°, Z = 4, R = 0.040, 4, triclinic, space group
P₁h₁1₁, a 9.581(1), b 12.933(2), c 14.493(2) Å, α
82.480(10), β 71.810(10), γ 75.100(10)°, Z = 2,
R = 0.030. The two H₂O mols. in 1 make short contacts with the C
atoms adjacent to the metal-bound N atom of the triazine ring
which provides insight about the intermediate of the hydrolysis.
X-ray and NMR data suggest that the electron-withdrawing effect of
the metal ion is the major responsible factor for the hydrolysis
of tptz. Cyclic voltammograms of the complexes exhibit a
metal-based 2e⁻ reduction (Rh(III) → Rh(I)) at the potential
range -0.42 to -0.98 V vs. SCE, followed by ligand-based redox
couple(s). These novel complexes show effective **catalytic**
properties for the electrocatalytic reduction of CO₂ in the potential
range -1.26 to -1.44 V.

IT 215370-38-0P
(preparation, NMR spectra, metal-promoted ligand hydrolysis, cyclic
voltammetry and **catalyst** for carbon dioxide
electrochem. reduction)

RN 215370-38-0 HCAPLUS

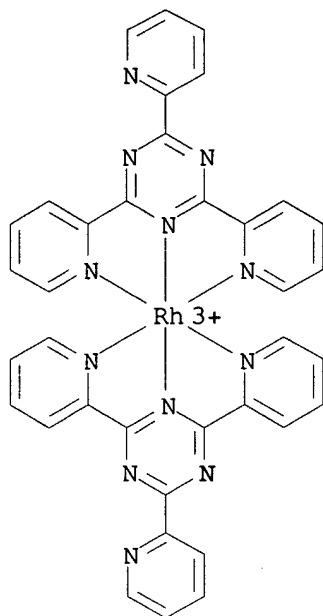
CN Rhodium(3+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-
1,3,5-triazine-κN1]-, (OC-6-1'2)-, triperchlorate (9CI) (CA
INDEX NAME)

CM 1

CRN 215370-37-9

CMF C36 H24 N12 Rh

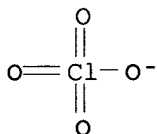
CCI CCS



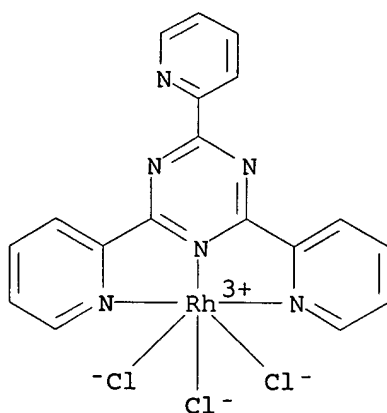
CM 2

CRN 14797-73-0

CMF Cl O4



IT 215370-36-8P
 (preparation, crystal structure, NMR spectra, metal-promoted ligand
 hydrolysis, cyclic voltammetry and **catalyst** for
 carbon dioxide reduction)
 RN 215370-36-8 HCAPLUS
 CN Rhodium, trichloro[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-
 1,3,5-triazine-κN1]-, dihydrate, (OC-6-21)- (9Cl) (CA INDEX
 NAME)



●2 H₂O

- CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
- ST crystal structure rhodium pyridyltriazine pyridylcarbonylamidato terpyridine; rhodium pyridyltriazine pyridylcarbonylamidato terpyridine picolinamide prepn; electrochem redn **catalyst** rhodium pyridyltriazine pyridylcarbonylamidato; electron withdrawing effect rhodium pyridyltriazine hydrolysis
- IT Reduction **catalysts**
(electrochem.; rhodium complexes with 2,4,6-tris(2-pyridyl)-1,3,5-triazine, bis(2-pyridylcarbonyl)amidato and terpyridine for electrochem. reduction of carbon dioxide)
- IT 124-38-9, Carbon dioxide, reactions
(electrochem. reduction **catalyzed** by rhodium complexes with 2,4,6-tris(2-pyridyl)-1,3,5-triazine, bis(2-pyridylcarbonyl)amidato and terpyridine)
- IT 71-47-6P, preparation
(preparation from electrochem. reduction of carbon dioxide **catalyzed** by rhodium complexes with 2,4,6-tris(2-pyridyl)-1,3,5-triazine, bis(2-pyridylcarbonyl)amidato and terpyridine)
- IT 215370-38-0P
(preparation, NMR spectra, metal-promoted ligand hydrolysis, cyclic voltammetry and **catalyst** for carbon dioxide electrochem. reduction)
- IT 215370-43-7P
(preparation, crystal structure, NMR spectra, cyclic voltammetry and **catalyst** for carbon dioxide electrochem. reduction)
- IT 215370-36-8P
(preparation, crystal structure, NMR spectra, metal-promoted ligand hydrolysis, cyclic voltammetry and **catalyst** for carbon dioxide reduction)
- IT 215370-40-4P
(preparation, cyclic voltammetry and **catalyst** for carbon dioxide electrochem. reduction)
- IT 35978-56-4P
(preparation, metal-promoted ligand hydrolysis, cyclic voltammetry and **catalyst** for carbon dioxide electrochem. reduction)
- REFERENCE COUNT: 73 THERE ARE 73 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 17 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:735329 HCAPLUS

DOCUMENT NUMBER: 126:79984

TITLE: High-sensitivity microdetermination of
sub-micromolar concentrations of levodopa,
carbidopa and α -methyldopa using a
coupled redox-complexation reaction

AUTHOR(S): Issopoulos, Prodromos B.; Salta, Sophia E.

CORPORATE SOURCE: Lab. Inorganic Pharmaceutical Analytical
Chem., Dep. Chem., Univ. Ioannina, Ioannina,
GR-451 10, Greece

SOURCE: Farmaco (1996), 51(10), 673-678

CODEN: FRMCE8

PUBLISHER: Societa Chimica Italiana

DOCUMENT TYPE: Journal

LANGUAGE: English

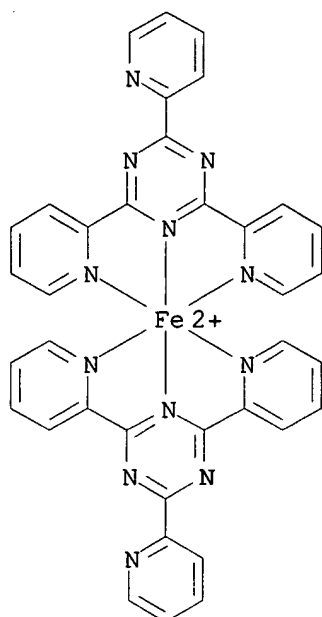
AB A high-sensitive and simultaneously accurate, simple and rapid spectrophotometric method for the determination of sub-micromolar concns. of levodopa (I), carbidopa (II) and α -Methyldopa (III) in the range of 0.13-3.55 I, 0.10-3.27 II and 0.10-2.94 $\mu\text{mol/L}$ III was based on a coupled redox-complexation reaction in which the first step was the oxidation of the I, II, and III by Fe (III) and the second step included the complexation of the Fe (II), resulting from the preceding redox reaction, with 2,4,6-tris(2-pyridyl)-1,3,5-triazine (TPTZ) and the formation of a stable deep-blue colored bis-chelate complex $[\text{Fe(II)-(TPTZ)}_2]^{2+}$ in a moderate acidic medium ($\text{pH } 4.60 \pm 0.05$), which exhibited an absorption maximum at $\lambda_{\text{max}} = 595 \text{ nm}$. The apparent molar absorptivities, and the Sandell's sensitivities -both calculated on anhydrous drugs examined- were $2.60 + 105 \text{ mol}^{-1} \text{ cm}^{-1}$ and 0.76 ng/cm^2 for I; $1.77 + 105 \text{ mol}^{-1} \text{ cm}^{-1}$ and 1.28 ng/cm^2 for II and $2.50 + 105 \text{ mol}^{-1} \text{ cm}^{-1}$ and 0.84 ng/cm^2 for III. Beer's law was obeyed in the concentration range 25-700 ppb for each drug. The regression line equation for each medicine was calculated with correlation coefficient of 0.9999, 1.0000 and 1.0000 for I, II, and III, resp. The results obtained from the determination of the drugs studied by using both the described procedure and the USP XXIII official methods were statistically compared by means of the Student's t-test and by the variance ratio F-test and no significant difference was observed

IT 22452-38-6

(spectrophotometric microdetn. of levodopa and carbidopa and methyldopa based on coupled redox-complexation reaction)

RN 22452-38-6 HCAPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl- κN)-4-(2-pyridinyl)-1,3,5-triazine- κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 64-2 (Pharmaceutical Analysis)

Section cross-reference(s): 1

IT 22452-38-6

(spectrophotometric microdetn. of levodopa and carbidopa and
methyldopa based on coupled redox-complexation reaction)

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L16 ANSWER 18 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:646487 HCAPLUS

DOCUMENT NUMBER: 125:276892

TITLE: Photoinitiator composition containing
boron-based coordination compounds and
halomethyl triazines, polymerizable
composition, and method

INVENTOR(S): Tanaka, Yasuhiro; Toba, Yasumasa; Yasuie,
Madoka

PATENT ASSIGNEE(S): Toyo Ink Mfg Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08217812	A2	19960827	JP 1995-29263	1995 0217

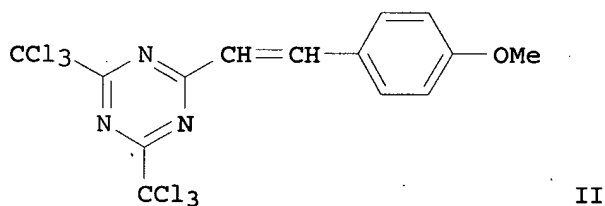
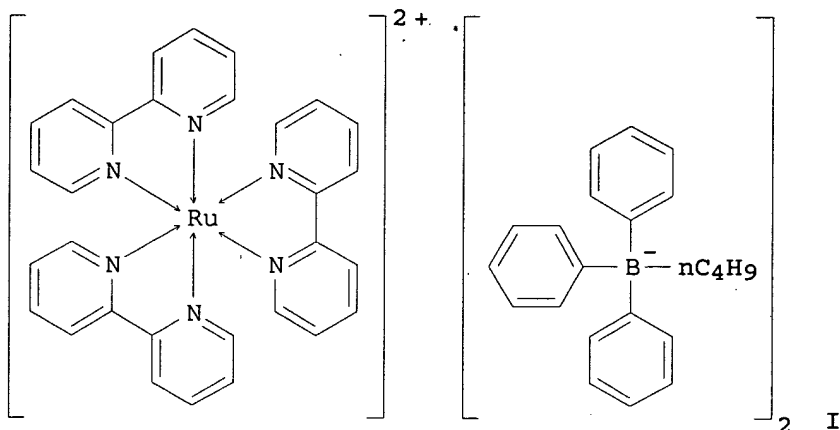
PRIORITY APPLN. INFO.:

JP 1995-29263

1995
0217

OTHER SOURCE(S):
GI

MARPAT 125:276892



AB The title photoinitiators consist of a chemical compound formed from a transition metal coordination complex cation and an organic boron anion, and a triazine compound which possesses trihalomethyl groups and a chromophore group. Pentaerythritol triacrylate was polymerized using I and II as **catalysts**.

IT 182897-22-9

(photoinitiator composition containing boron-based coordination compds. and halomethyl triazines, polymerizable composition, and method)

RN 182897-22-9 HCAPLUS

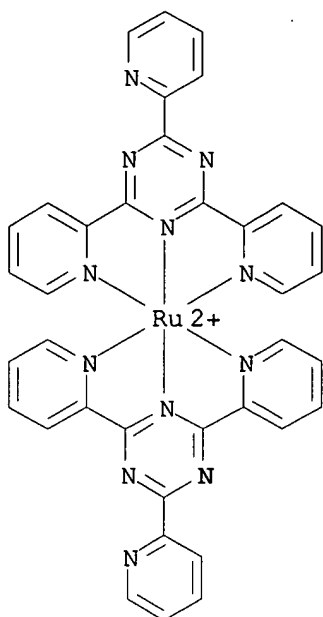
CN Ruthenium(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)-, bis[(T-4)-butyltriphenylborate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 61037-16-9

CMF C36 H24 N12 Ru

CCI CCS

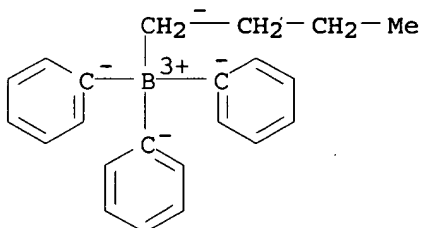


CM 2

CRN 47252-39-1

CMF C22 H24 B

CCI CCS



IC ICM C08F002-50

ICS C08G059-40; C08G059-68; C09D004-00

CC 35-3 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 67

ST boron transition metal coordination compd **catalyst**;
halomethyl triazine **catalyst** photochem polymnIT Polymerization **catalysts**(photochem., photoinitiator composition containing boron-based
coordination compds. and halomethyl triazines, polymerizable
composition, and method)

IT	24481-45-6	24481-46-7	42573-57-9	42880-04-6	42880-09-1
	69432-40-2	69432-50-4	97802-67-0	97802-70-5	97802-84-1
	173856-10-5	173856-11-6	173856-12-7	182575-26-4	
	182575-27-5	182575-28-6	182575-29-7	182575-30-0	
	182575-31-1	182575-32-2	182575-33-3	182575-34-4	
	182575-35-5	182575-36-6	182897-22-9		

(photoinitiator composition containing boron-based coordination compds.
and halomethyl triazines, polymerizable composition, and method)

L16 ANSWER 19 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1995:584530 HCAPLUS

DOCUMENT NUMBER: 123:43007

TITLE: An electrochemical and spectroelectrochemical investigation of bis(2,2'-bipyridine)(2,4,6-tris(2-pyridyl)triazine)ruthenium(II): a potential building block for supramolecular systems

AUTHOR(S): Berger, Robert M.; Holcombe, Joel R.

CORPORATE SOURCE: Department of Chemistry, Indiana University-Purdue University Fort Wayne, Fort Wayne, IN, 46805, USA

SOURCE: Inorganica Chimica Acta (1995), 232(1-2), 217-21

CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

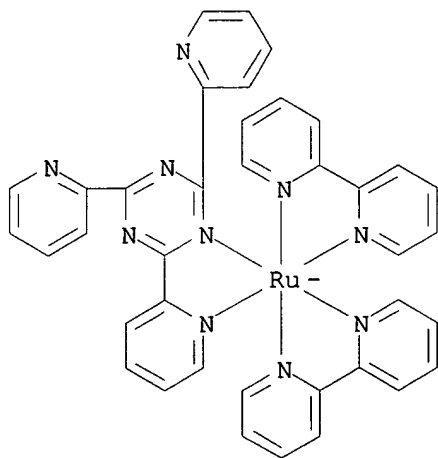
AB Electrochem. and spectroelectrochem. measurements were carried out on $[\text{Ru}(\text{bpy})_2(\text{tpt})]^{2+}$ (bpy = 2,2'-bipyridine, tpt = 2,4,6-tris(2-pyridyl)triazine). In DMF solution, this complex undergoes reversible 1-electron redns. at neg. potentials with E° values of -0.59, -1.22 and -1.48 V vs. $\text{Ag}/\text{AgCl}(3\text{M NaCl})$. Addnl., two poorly resolved reduction waves are observed at -1.77 and -1.86 V. In acetonitrile, a single metal based oxidn. is observed at +1.55 V vs. $\text{Ag}/\text{AgCl}(3\text{M NaCl})$. UV-visible spectroelectrochem. was used to characterize the complex as well as its 1st three reduction products. From the spectroelectrochem. measurements, the 1st reduction is assigned as a tpt reduction, while the 2nd and 3rd redns. involve sep. bpy ligands.

IT 164532-87-0

(electrochem. formation and UV-visible spectra in DMF)

RN 164532-87-0 HCAPLUS

CN Ruthenate(1-), bis(2,2'-bipyridine-N,N')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)

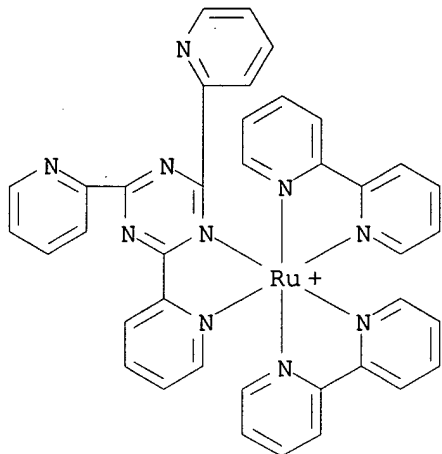


IT 164532-85-8 164532-86-9

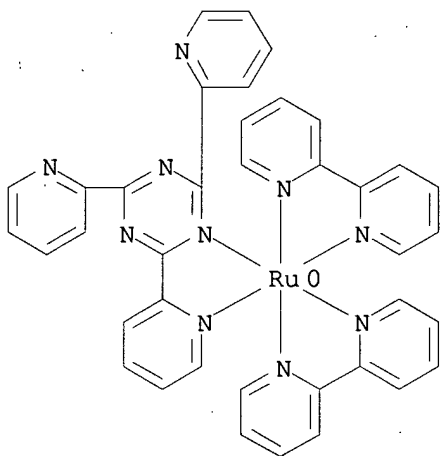
(electrochem. formation and reduction and UV-visible spectra in

DMF)

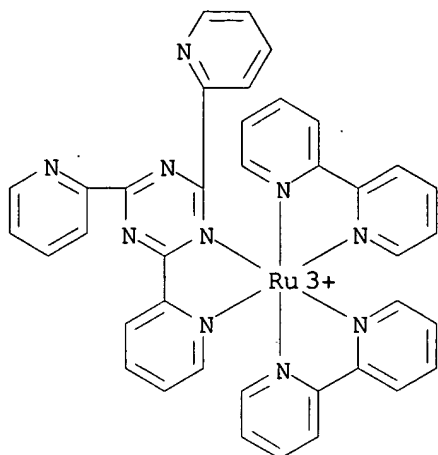
RN 164532-85-8 HCAPLUS
 CN Ruthenium(1+), bis(2,2'-bipyridine-N,N') (2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)



RN 164532-86-9 HCAPLUS
 CN Ruthenium, bis(2,2'-bipyridine-N,N') (2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)



IT 164532-88-1
 (electrochem. oxidative preparation of)
 RN 164532-88-1 HCAPLUS
 CN Ruthenium(3+), bis(2,2'-bipyridine-N,N') (2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)

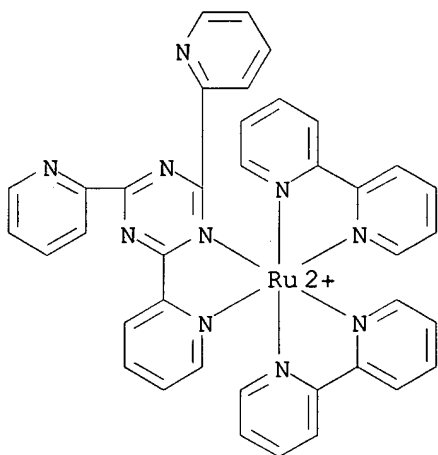


IT 134388-07-1

(electrochem. reduction and UV-visible spectra in DMF)

RN 134388-07-1 HCAPLUS

CN Ruthenium(2+), bis(2,2'-bipyridine-N,N') (2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-33)- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)

Section cross-reference(s): 73, 78

IT **Oxidation**, electrochemical

(of ruthenium bipyridine pyridyltriazine complex in acetonitrile or DMF)

IT 164532-87-0

(electrochem. formation and UV-visible spectra in DMF)

IT 164532-85-8 164532-86-9

(electrochem. formation and reduction and UV-visible spectra in DMF)

IT 164532-88-1

(electrochem. **oxidative** preparation of)

IT 134388-07-1

(electrochem. reduction and UV-visible spectra in DMF)

L16 ANSWER 20 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:159825 HCAPLUS
DOCUMENT NUMBER: 118:159825
TITLE: Synthesis and properties of new DNA cleavage
agents based on oxoruthenium(IV)
AUTHOR(S): Gupta, Nishi; Grover, Neena; Neyhart, Gregory
A.; Singh, Phirtu; Thorp, H. Holden
CORPORATE SOURCE: Dep. Chem., North Carolina State Univ.,
Raleigh, NC, 27695, USA
SOURCE: Inorganic Chemistry (1993), 32(3), 310-16
CODEN: INOCAJ; ISSN: 0020-1669
DOCUMENT TYPE: Journal
LANGUAGE: English

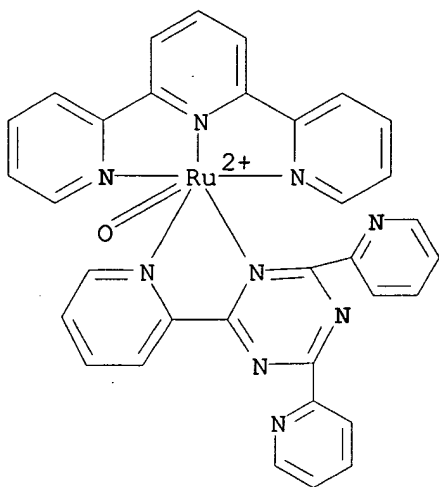
AB New aquaruthenium(II) reagents that are capable of being oxidized to hydroxoruthenium(III) and oxoruthenium(IV) were prepared. Complexes based on Ru(tpy)(L)OH₂²⁺ (L = η^2 -tpt, phen, dppz, tmen; tpy = 2,2':6',2''-terpyridine, tpt = 2,4,6-tripyridyltriazine, phen = 1,10-phenanthroline, dppz = dipyridophenazine, and tmen = N,N',N'-tetramethylethylenediamine) were prepared and can all be reversibly oxidized to their RuIVO forms, which are component DNA cleavage agents, as is Ru(phen)₂(py)O₂⁺. In addition to Ru(tpy)(η^2 -tpt)OH₂²⁺, the η^3 complex of tpt, Ru(tpy)(η^3 -tpt)₂⁺, can also be prepared under similar conditions. In the presence of Ag⁺ ion, a novel Ru₂Ag complex can be isolated and was crystallog. characterized. [Ru(tpy)(η^3 -tpt)](ClO₄)₂·0.5AgClO₄·0.5H₂O crystallizes as monoclinic, space group A2/a, a 14.723(5), b 26.061(6), c 22.148(6) Å, β 106.33(3)°, Z = 4, R = 0.0807, Rw = 0.1156. The Ru(tpy)OH₂²⁺ unit can also be attached to the tmen-AO⁺ ligand, where a N,N',N'-trimethylethylenediamine function is appended via a (CH₂)₆ linker to the acridine orange (HAO) intercalator. The Ru(tpy)(tmen-AO)OH₂³⁺ complex is an effective cleavage agent, but only when oxidation is performed on the complex prebound to DNA. In homogeneous solution, electrochem. reversible access of only the RuIIIIOH form is possible, probably because of oxidation of the polymethylene linker.

IT 146344-84-5P

(formation by oxidation and DNA cleavage by)

RN 146344-84-5 HCAPLUS

CN Ruthenium(2+), oxo(2,2':6',2''-terpyridine-N,N',N'')(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2)-, (OC-6-43)- (9CI) (CA INDEX NAME)



IT 146647-08-7P
 (preparation and crystal structure of)
 RN 146647-08-7 HCAPLUS
 CN Ruthenium(5+), (silver)bis(2,2':6',2''-terpyridine-
 N,N',N'')bis[μ-(2,4,6-tri-2-pyridinyl-1,3,5-triazine-
 N1,N2,N6:N3,N4)]di-, pentaperchlorate, monohydrate (9CI) (CA
 INDEX NAME)

CM 1

CRN 146647-07-6
 CMF C66 H46 Ag N18 Ru2 . 5 Cl O4

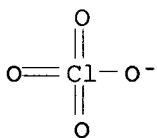
CM 2

CRN 146647-06-5
 CMF C66 H46 Ag N18 Ru2
 CCI CCS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 14797-73-0
 CMF Cl O4



IT 146435-73-6P
 (preparation and cyclic voltammetry and oxidation and
 Pourbaix diagram of)
 RN 146435-73-6 HCAPLUS
 CN Ruthenium(5+), diaqua(silver)bis(2,2':6',2''-terpyridine-
 N,N',N'')bis[μ-(2,4,6-tri-2-pyridinyl-1,3,5-triazine-

N1,N2:N4,N5)]di-, pentaperchlorate (9CI) (CA INDEX NAME)

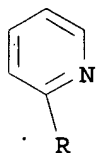
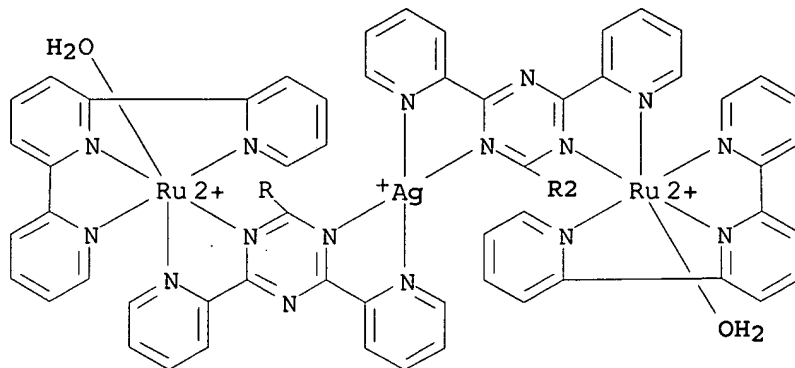
CM 1

CRN 146435-72-5

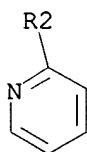
CMF C66 H50 Ag N18 O2 Ru2

CCI CCS

PAGE 1-A



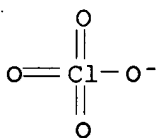
PAGE 2-A



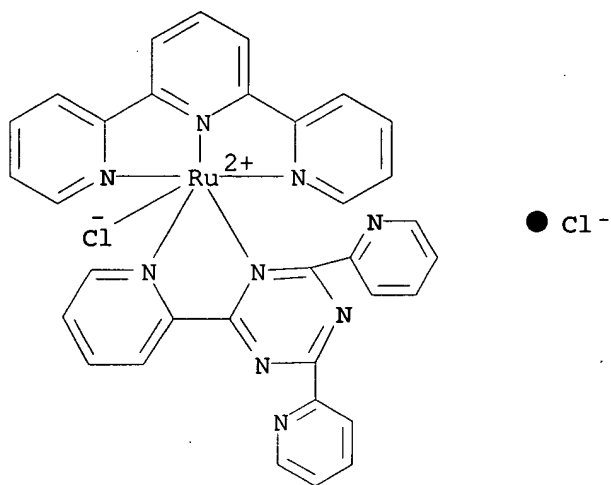
CM 2

CRN 14797-73-0

CMF Cl O4



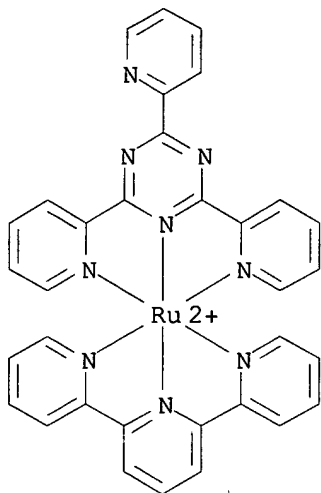
IT 146344-76-5P
 (preparation and electrochem. oxidation and aquation of, in
 presence of silver perchlorate)
 RN 146344-76-5 HCAPLUS
 CN Ruthenium(1+), chloro(2,2':6',2''-terpyridine-N,N',N'')(2,4,6-tri-
 2-pyridinyl-1,3,5-triazine-N1,N2)-, chloride, (OC-6-43)- (9CI)
 (CA INDEX NAME)



IT 134388-06-0
 (reaction of, with silver perchlorate, idle d and elec.
 potential of)
 RN 134388-06-0 HCAPLUS
 CN Ruthenium(2+), (2,2':6',2''-terpyridine-
 κ N1, κ N1', κ N1'')(2,4,6-tri-2-pyridinyl-1,3,5-
 triazine- κ N1, κ N2, κ N6)-, (OC-6-23)-,
 bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 134388-05-9
 CMF C33 H23 N9 Ru
 CCI CCS

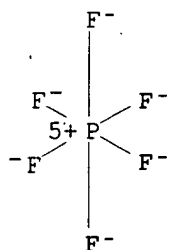


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



- CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 6, 72, 75
- ST crystal structure ruthenium silver trinuclear tripyridyltriazine;
 DNA cleavage agent oxoruthenium 4 complex; ruthenium terpyridine
 oxo quaternary complex; electrochem oxidn ruthenium 2
 terpyridine complex
- IT **Oxidation**, electrochemical
 (of ruthenium complexes with nitrogen donors)
- IT 101241-02-5, Aqua(2,2':6',2''-terpyridine)(1,10-
 phenanthroline)ruthenium(2+)
 (cyclic voltammetry and **oxidation** and acidity constant and
 Pourbaix diagram of)
- IT 127714-17-4, Aqua(2,2':6',2''-terpyridine)(N,N,N',N'-
 tetramethylethylenediamine)ruthenium(2+)
 (cyclic voltammetry and **oxidation** and acidity constant of)
- IT **146344-84-5P** 146344-86-7P
 (formation by **oxidation** and DNA cleavage by)
- IT 98542-34-8P, Oxo(1,10-phenanthroline)(2,2':6',2''-
 terpyridine)ruthenium(2+) 146344-85-6P
 (formation of, by **oxidation**)

- IT 67-64-1P, Acetone, preparation
(formation of, in **oxidation** of alc. by ruthenium(IV) oxo complexes)
- IT 67-63-0, 2-Propanol, reactions
(**oxidation** of, by ruthenium(IV) oxo complexes)
- IT 146647-08-7P
(preparation and crystal structure of)
- IT 146344-80-1P
(preparation and cyclic voltammetry and **oxidation** and DNA cleavage and acidity constant of)
- IT 49729-11-5P
(preparation and cyclic voltammetry and **oxidation** and DNA cleavage by)
- IT 146435-73-6P
(preparation and cyclic voltammetry and **oxidation** and Pourbaix diagram of)
- IT 146344-76-5P
(preparation and electrochem. **oxidation** and aquation of, in presence of silver perchlorate)
- IT 134388-06-0
(reaction of, with silver perchlorate, idle d and elec. potential of)

L16 ANSWER 21 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:155426 HCAPLUS

DOCUMENT NUMBER: 118:155426

TITLE: The oxalic acid **catalyzed**
oxidation of bis(2,4,6-tripyridyl-1,3,5-triazine)iron(II) by chromium(VI) in acetate buffer

AUTHOR(S): Satyanarayana, Tatakuntla; Anipindi, Nageswara Rao; Subbiah, Veeraputhiran; Pandit, Madhusudan Waman

CORPORATE SOURCE: Sch. Chem., Andhra Univ., Visakhapatnam, 530 003, India

SOURCE: Transition Metal Chemistry (Dordrecht, Netherlands) (1993), 18(1), 93-5
CODEN: TMCHDN; ISSN: 0340-4285

DOCUMENT TYPE: Journal

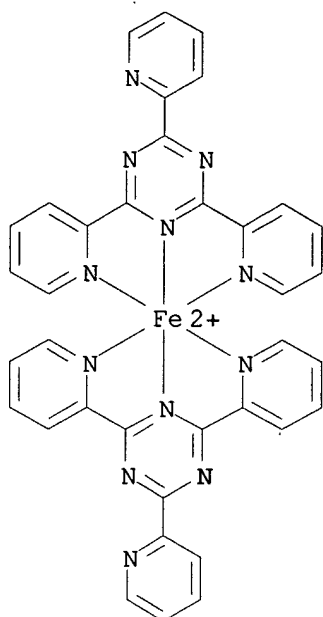
LANGUAGE: English

AB The reaction between bis(2,4,6-tri(2-pyridyl)-1,3,5-triazine)iron(II), Fe(TPTZ)2²⁺, and Cr(VI) in acetate buffers is very slow. However, in the presence of oxalic acid (**catalyst**) it is very fast and is completed within 10 s. The reaction was studied in the 3.6-5.6 pH range by using stopped-flow spectrophotometry. The reaction is first order in the substrate and zero order in the oxidant. The rate of the reaction increases with an increase in pH. Kinetic evidence for complexation between the substrate and the **catalyst** was obtained and a mechanism involving the formation of an ion-pair between Fe(TPTZ)2²⁺ and the oxalate ion is proposed.

IT 22452-38-6
(**oxidation** of, by chromium(VI), **catalyzed** by oxalic acid, kinetics and mechanism of)

RN 22452-38-6 HCAPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



- CC 67-2 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
 Section cross-reference(s): 78
- ST iron pyridyltriazine oxidn chromium oxalic acid
- IT **Oxidation**
 (of iron(II) tripyridyltriazine complex by chromium(VI), catalyzed by oxalic acid)
- IT Kinetics of **oxidation**
 (of iron(II) tripyridyltriazine complex by chromium(VI), catalyzed by oxalic acid, temperature and pH dependences of)
- IT **Oxidation catalysts**
 (oxalic acid, for iron(II) tripyridyltriazine complex by chromium(VI))
- IT 144-62-7, Oxalic acid, uses
 (catalysts, for oxidation of iron(II) tripyridyltriazine complex by chromium(VI))
- IT 18540-29-9, Chromium(6+), reactions
 (oxidation by, of iron(II) tripyridyltriazine complex, catalyzed by oxalic acid, kinetics and mechanism of)
- IT 22452-38-6
 (oxidation of, by chromium(VI), catalyzed by oxalic acid, kinetics and mechanism of)

L16 ANSWER 22 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:559471 HCAPLUS

DOCUMENT NUMBER: 117:159471

TITLE: Electrocatalytic reduction of carbon dioxide with iron, cobalt, and nickel complexes of terdentate ligands

AUTHOR(S): Arana, C.; Yan, S.; Keshavarz-K., M.; Potts, K. T.; Abruna, H. D.

CORPORATE SOURCE: Dep. Chem., Cornell Univ., Ithaca, NY, 14853, USA

SOURCE: Inorganic Chemistry (1992), 31(17), 3680-2
 CODEN: INOCAJ; ISSN: 0020-1669

DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The authors prepared and characterized, by cyclic voltammetry in acetonitrile and DMF (under N₂ or CO₂), iron, cobalt and nickel complexes of a variety of terdentate ligands including 2,6-diacetylpyridine-bis-aniline (dapa), tetra-2-pyridylpyrazine (tppz), tri-2-pyridyltriazine (tptz), tetra-2-picolylethylenediamine (tpen), terpyridine (tpy) and vinylterpyridine (v-tpy). All of these materials exhibit electrocatalytic activity towards the reduction of CO₂ and the magnitude of the catalytic effect is a function of both the ligand and the metal center. Depending on the metal complex electrocatalysis is observed at potentials that correspond to metal and ligand based redox processes indicating that more than one mechanism might be operative. In the case of electropolymerizable metal complexes (those incorporating v-tpy) electrodeposited films exhibited electrocatalytic activity as well. In various cases, electrocatalysis was observed at potentials below -1.0 V which represents a very significant diminution (of about 1 V) in the overpotential.

IT 143371-83-9 143371-84-0
 (redox potential and electrocatalytic properties toward carbon dioxide for)

RN 143371-83-9 HCAPLUS

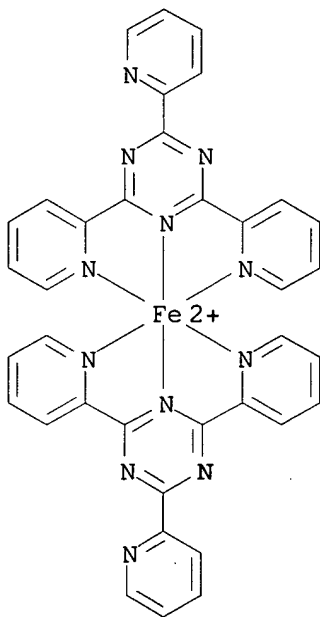
CN Iron(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 22452-38-6

CMF C36 H24 Fe N12

CCI . CCS

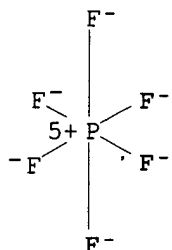


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



RN 143371-84-0 HCAPLUS

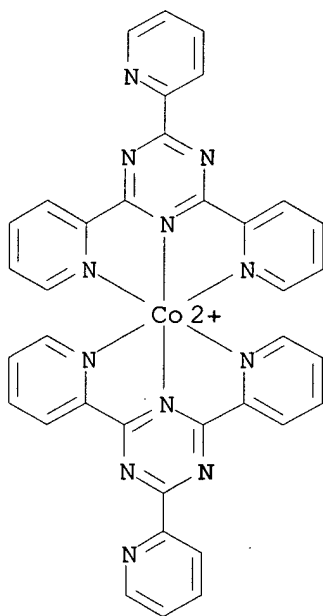
CN Cobalt(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 31084-97-6

CMF C36 H24 Co N12

CCI CCS

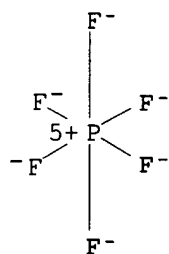


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

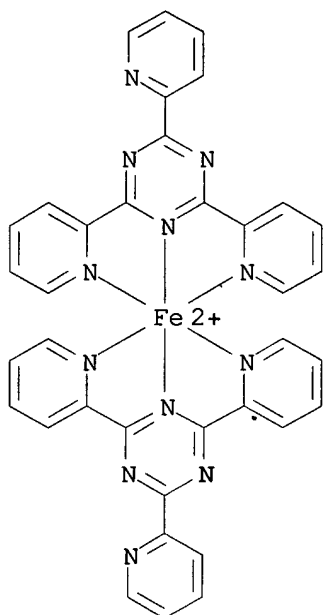


- CC 72-2 (Electrochemistry)
Section cross-reference(s): 67
- ST carbon dioxide redn electrocatalytic; electroredn
catalytic oxide transition metal complex; redox potential
iron cobalt nickel complex; polymn electrochem complex
electrocatalytic property
- IT Reduction **catalysts**
(electrochem., transition metal complexes with terdentate
ligands, for carbon dioxide)
- IT 55140-72-2 65297-32-7 66118-92-1 82738-54-3 108270-37-7
108270-45-7 114320-90-0 121881-83-2 121881-84-3
143371-75-9 143371-76-0 143371-77-1 143371-78-2
143371-79-3 143371-80-6 143371-82-8 **143371-83-9**
143371-84-0 143371-85-1 143397-06-2 143428-37-9
143441-84-3
(redox potential and electrocatalytic properties toward carbon
dioxide for)
- L16 ANSWER 23 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:519268 HCAPLUS
DOCUMENT NUMBER: 117:119268
TITLE: Kinetics and mechanism of the
oxidation of bis(2,4,6-tripyridyl-
1,3,5-triazine)iron(II) by
trans-1,2-diaminocyclohexanetetraacetatomangan-
ate(III) in acetate buffer
- AUTHOR(S): Satyanarayana, Tatakuntla; Anipindi, Nageswara
Rao; Subbiah, Veeraputhiran; Pandit,
Madhusudan Waman
- CORPORATE SOURCE: Sch. Chem., Andhra Univ., Visakhapatnam,
530003, India
- SOURCE: Transition Metal Chemistry (Dordrecht,
Netherlands) (1992), 17(4), 325-7
CODEN: TMCHDN; ISSN: 0340-4285
- DOCUMENT TYPE: Journal
LANGUAGE: English
- AB The rapid oxidation of bis(2,4,6-tripyridyl-1,3,5-
triazine)iron(II), [Fe(TPTZ)₂]²⁺, by trans-1,2-
diaminocyclohexanetetraacetatomanganate(III), [MnIII(L)]⁻, in
acetate buffers was monitored by using stopped-flow
spectrophotometry. The reaction is first order in the substrate
and evidence was obtained for pre-complexation between the oxidant
and the substrate. The reaction rate increases as the pH
increases. Characterization of the products by using the
radiotracers ⁵⁴Mn and ⁵⁹Fe indicated that [MnII(L)]²⁻ and
[Fe(TPTZ)₂]³⁺ are the final products. The reaction obeys the rate
law: $k_{obs} = k_3 K_2 [MnIII(L)] / \{1 + K_1 [H^+] + K_2 [MnIII(L)]\}$.
- IT 22452-38-6
(oxidation of, by manganese(III))

diaminocyclohexanetetraacetato complex ion, kinetics and mechanism of)

RN 22452-38-6 HCAPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 67-3 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)

Section cross-reference(s): 78

ST iron pyridyltriazine oxidn manganese
aminocyclohexanetetraacetato kinetics

IT **Oxidation**

(of iron(II) tripyridyltriazine complex by manganese(III)
diaminocyclohexanetetraacetato complex, in acetate buffer)

IT Kinetics of **oxidation**

(of iron(II) tripyridyltriazine complex by manganese(III)
diaminocyclohexanetetraacetato complex, pH and temperature
dependences of)

IT 73360-48-2

(**oxidation** by, of iron(II) tripyridyltriazine complex
ion, kinetics and mechanism of)

IT 22452-38-6

(**oxidation** of, by manganese(III)
diaminocyclohexanetetraacetato complex ion, kinetics and
mechanism of)

L16 ANSWER 24 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:112702 HCAPLUS

DOCUMENT NUMBER: 108:112702

TITLE: Rhodium(I) complexes with the
2,2'-bipyrimidine ligand

AUTHOR(S): Garcia, Maria P.; Millan, Jose L.; Esteruelas,
Miguel A.; Oro, Luis A.

CORPORATE SOURCE: Inst. Cienc. Mater. Aragon, Univ. Zaragoza,
Zaragoza, 50009, Spain

SOURCE: Polyhedron (1987), 6(6), 1427-31
 CODEN: PLYHDE; ISSN: 0277-5387

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 108:112702

AB Mono- and dinuclear rhodium(I) complexes $[\text{Rh}(\text{L}2)(\text{bipym})]^+$ and $[[\text{Rh}(\text{L}2)]_2(\mu\text{-bipym})]^{2+}$ [bipym = 2,2'-bipyrimidine; $\text{L}2$ = 1,5-cyclooctadiene (cod), tetrafluorobenzobicyclo[1.1.2]octatriene (tfb), bicyclo[2.2.1]heptadiene (nbd), or $(\text{CO})_2$] were prepared and their **catalytic** activity in H-transfer reactions examined. The heterodinuclear $[\text{Cl}_2\text{Pd}(\mu\text{-bipym})\text{Rh}(\text{tfb})]\text{ClO}_4$ complex was obtained by treating $[\text{Rh}(\text{tfb})(\text{bipym})]^+$ with $[\text{PdCl}_2(\text{cod})]$ or alternatively from $[\text{Rh}(\text{tfb})(\text{Me}_2\text{CO})_x]^+$ with $[\text{PdCl}_2(\text{bipym})]$. Ion-pair complexes $[\text{Rh}(\text{L}2)(\text{bipym})]^+[\text{RhCl}_2(\text{L}2)]^-$ ($\text{L}2$ = cod, nbd, tfb) were prepared by adding bipym to Me_2CO suspensions of $[\text{RhCl}(\text{L}2)]_2$.

IT 113006-62-5P
 (preparation of)

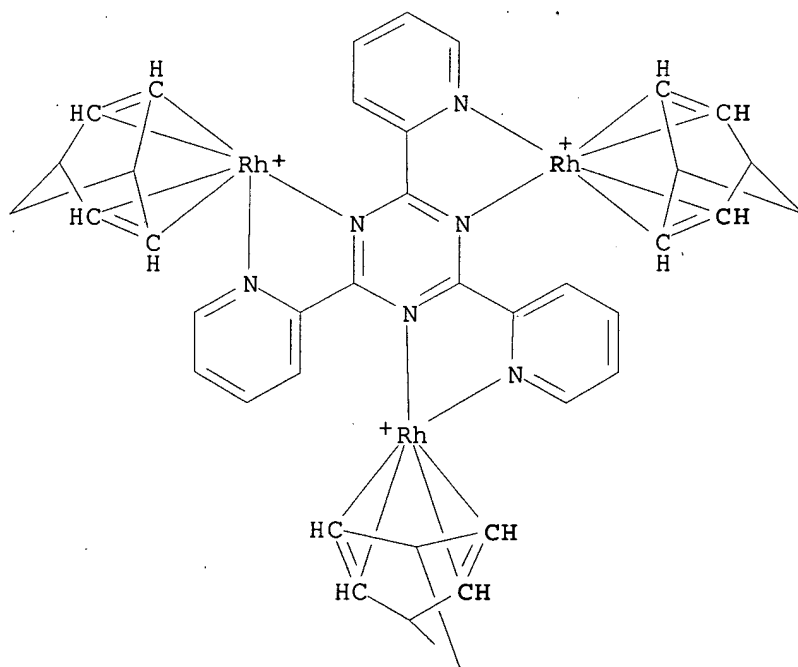
RN 113006-62-5 HCAPLUS

CN Rhodium(3+), tris[(2,3,5,6- η)-bicyclo[2.2.1]hepta-2,5-diene] [μ_3 -(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2:N3,N4:N5,N6)]tri-, triperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 113006-61-4
 CMF C39 H36 N6 Rh3
 CCI CCS

PAGE 1-A

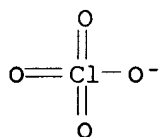


PAGE 2-A

CM 2

CRN 14797-73-0

CMF Cl 04



- CC 29-13 (Organometallic and Organometalloidal Compounds)
 ST rhodium bipyrimidine olefin complex; hydrogen transfer
catalyst rhodium complex; conductance rhodium bipyrimidine
 complex
 IT Hydrogen transfer **catalysts**
 (rhodium bipyrimidine olefin complexes, for hydrogen transfer
 from isopropanol to acetophenone)
 IT 98-86-2, Acetophenone, reactions
 (hydrogen transfer from isopropanol to, rhodium bipyrimidine
 complexes as **catalysts** for)
 IT 67-63-0, Isopropanol, reactions
 (hydrogen transfer from, to acetophenone, rhodium bipyrimidine
 complexes as **catalysts** for)
 IT 105083-99-6P 112987-39-0P 112987-41-4P 112987-43-6P
 112987-45-8P 112987-47-0P 112987-48-1P 112987-50-5P
 112987-51-6P 112987-52-7P 113006-55-6P 113006-57-8P
 113006-59-0P 113006-60-3P **113006-62-5P**
 (preparation of)

L16 ANSWER 25 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:62131 HCAPLUS

DOCUMENT NUMBER: 108:62131

TITLE: Study confirming the accuracy of a method for
measuring TOC by wet **oxidation**

AUTHOR(S): Sakamoto, T.; Miyasaka, T.

CORPORATE SOURCE: Japan Organo Co., Ltd., Tokyo, 113, Japan

SOURCE: Ultrapure Water (1987), 4(9), 24, 26-8, 30-1

CODEN: ULWAE5; ISSN: 0747-8291

DOCUMENT TYPE: Journal

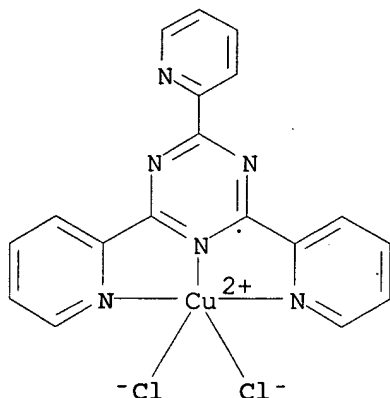
LANGUAGE: English

- AB Synthetic and natural organic compds. of known chemical structures were
 used to compare the accuracy of total organic C (TOC) determination in water
 and wastewater by a wet **oxidation** method (S2082-
oxidation combined with UV irradiation) with the accuracy of
 combustion-IR anal. The latter method was little affected by
 inorg. salts. NaCl at concns. of >250 mg/L considerably
 interfered with TOC determination by the wet **oxidation**, whereas
 Na2SO4 at a concentration of ≤2000 mg/L showed no interference.

IT 107017-20-9

(determination of, in water, wet **oxidation** method in)

RN 107017-20-9 HCAPLUS
 CN Copper, dichloro(2,4,6-tri-2-pyridinyl-1,3,5-triazine-
 κ N1, κ N2, κ N6)-, trihydrate (9CI) (CA INDEX NAME)



● 3 H₂O

CC 61-3 (Water)
 Section cross-reference(s): 80
 ST carbon org detn wet oxidn; analysis water carbon wet
 oxidn; wastewater org carbon detn oxidn
 IT Fulvic acids
 Humic acids
 Peptones
 (determination of, in water, wet oxidation method in)
 IT 7440-44-0, Carbon, analysis
 (determination of total organic, in water, wet oxidation method in)
 IT 50-99-7, D-Glucose, analysis 61-73-4, Methylene Blue 64-17-5,
 Ethanol, analysis 65-85-0, Benzoic acid, analysis 66-71-7,
 1,10-Phenanthroline 67-56-1, Methanol, analysis 67-63-0,
 2-Propanol, analysis 67-64-1, Acetone, analysis 77-92-9,
 Citric acid, analysis 83-07-8, 4-Aminoantipyrine 121-57-3
 142-87-0, Decyl sodium sulfate 148-24-3, 8-Quinolinol, analysis
 151-21-3, analysis 547-58-0, Methyl Orange 633-96-5, Orange II
 877-24-7, Potassium hydrogenphthalate 1191-50-0, Tetradecyl
 sodium sulfate 2386-54-1 2832-45-3 5324-47-0 13419-61-9
 16177-21-2, L-Sodium glutamate 25155-30-0 58115-02-9
 107017-20-9
 (determination of, in water, wet oxidation method in)
 IT 7732-18-5, Water, analysis
 (organic carbon determination in, wet oxidation method for,
 accuracy of)

L16 ANSWER 26 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1984:141193 HCAPLUS
 DOCUMENT NUMBER: 100:141193
 TITLE: Electrochemical sensors for anionic
 surfactants. I. The electrode based on
 bis[2,4,6-tris(2-pyridyl)-1,3,5-
 triazine]iron(II) dodecyl sulfate
 AUTHOR(S): Pak, U. Sap; Anghel, D. F.; Luca, C.

CORPORATE SOURCE: Dep. Chem. Phys., Inst. Chem. Res., Bucharest,
R-77208, Rom.

SOURCE: Revue Roumaine de Chimie (1983), 28(9-10),
883-90

CODEN: RRCHAX; ISSN: 0035-3930

DOCUMENT TYPE: Journal

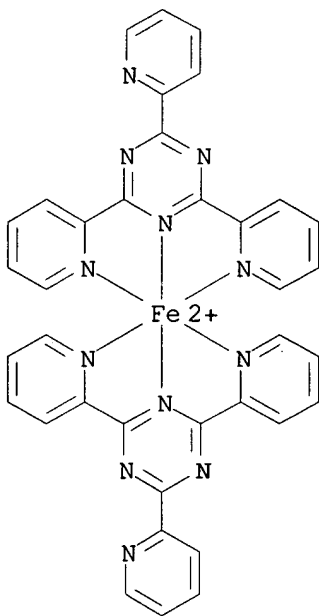
LANGUAGE: English

AB A dodecyl sulfate-selective electrode is described which is based on an iron(II)-2,4,6-tri(2-pyridyl)-1,3,5-triazine (1:2) [22452-38-6] complex. The concentration of the complex in the membrane mediator (PhNO₂) is 10⁻³M. The electrode has a Nernstian slope within the activity range 7.1 + 10⁻⁶-1.4 + 10⁻³M of dodecyl sulfate. The electrode behavior does not depend on pH in the range 4.5-9.0. The electrode has good selectivity with respect to interference by inorg. compds. Among the organic anions, only surfactant anions interfere. The sensor allows determination of critical micelle concentration in the absence or presence of inorg. electrolytes. It has been used as the end-point detector in potentiometric titration of ionic surfactants and for the determination of anionic surfactant content of micellar solns. used for enhanced oil recovery.

IT 22452-38-6
(electrodes containing, dodecyl sulfate-selective)

RN 22452-38-6 HCAPLUS

CN Iron(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 46-1 (Surface Active Agents and Detergents)

IT 22452-38-6
(electrodes containing, dodecyl sulfate-selective)

L16 ANSWER 27 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1982:112159 HCAPLUS

DOCUMENT NUMBER: 96:112159

TITLE: Solution redox couples for electrochemical

energy storage. II. Cobalt(III)-cobalt(II) complexes with o-phenanthroline and related ligands

AUTHOR(S): Chen, Yih Wen D.; Santhanam, K. S. V.; Bard, Allen J.

CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, 78712, USA

SOURCE: Journal of the Electrochemical Society (1982), 129(1), 61-6
CODEN: JESOAN; ISSN: 0013-4651

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Co(III) and Co(II) complexes with o-phenanthroline, bipyridine, and related ligands were examined by voltammetric and coulometric techniques in aqueous H₂SO₄ media to investigate their suitability as redox couples for electrochem. energy storage systems and semiconductor photoelectrochem. cells. The Co(II) complex undergoes a rapid (.apprx.10⁻³ cm/s) 1-electron **oxidation** at a graphite or Pt electrode to yield the Co(III) complex. With several ligands, both forms of the couple are very stable and show formal potentials shifted very neg. (to .apprx.0.1 V vs. SCE) from that of the aqua-Co(III/II) couple.

IT 80995-91-1
(oxidation of, kinetics of electrochem., in aqueous sulfuric acid solution)

RN 80995-91-1 HCAPLUS

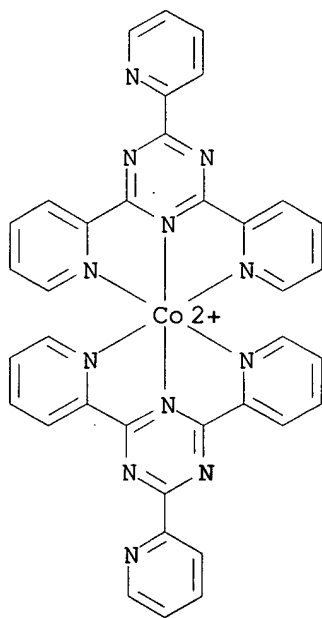
CN Cobalt(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 31084-97-6

CMF C36 H24 Co N12

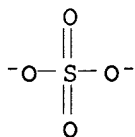
CCI CCS



CM 2

CRN 14808-79-8

CMF 04 S

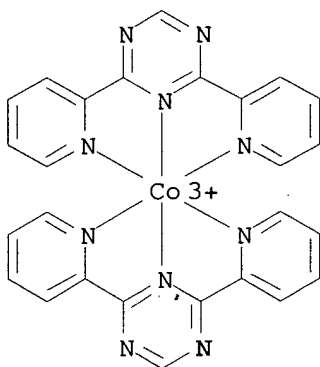


IT 80923-87-1

(redox reaction of system containing, electrochem., in sulfate solns.)

RN 80923-87-1 HCAPLUS

CN Cobalt(3+), bis(2,4-di-2-pyridinyl-1,3,5-triazine-N2,N3,N4)-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)

Section cross-reference(s): 52, 67, 68, 78

IT Kinetics of **oxidation**

(electrochem., of cobalt complexes with bipyridine and phenanthroline and related ligands, in aqueous sulfuric acid solution)

IT 7440-06-4, uses and miscellaneous 7782-42-5, uses and miscellaneous

(electrode, electrochem. **oxidation** of cobalt complexes on, in sulfate solution)

IT 7439-97-6, uses and miscellaneous

(electrode, electrochem. **oxidation** of cobalt-phenanthroline complexes on, in sulfate solution)

IT 26096-51-5 70765-25-2 77610-09-4 80711-12-2 80711-13-3

80733-46-6 80995-91-1

(oxidation of, kinetics of electrochem., in aqueous sulfuric acid solution)

IT 18581-79-8 19052-39-2 19137-07-6 62791-75-7 80711-14-4

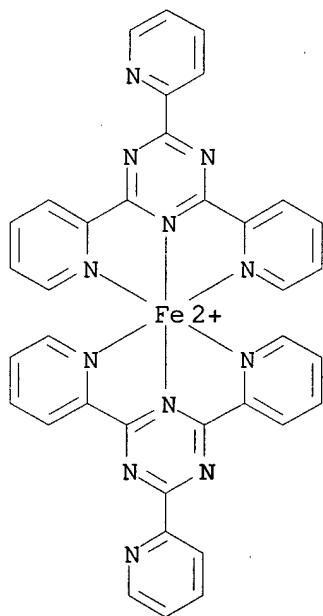
80711-15-5 80923-87-1

(redox reaction of system containing, electrochem., in sulfate solns.)

L16 ANSWER 28 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:622817 HCAPLUS

DOCUMENT NUMBER: 95:222817
 TITLE: Solution redox couples for electrochemical energy storage. I. Iron(III)-iron(II) complexes with o-phenanthroline and related ligands
 AUTHOR(S): Chen, Yih-Wen D.; Santhanam, K. S. V.; Bard, Allen J.
 CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, 78712, USA
 SOURCE: Journal of the Electrochemical Society (1981), 128(7), 1460-7
 CODEN: JESOAN; ISSN: 0013-4651
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Fe³⁺-Fe²⁺ complexes with o-phenanthroline and related ligands were examined by electrochem. techniques in aqueous H₂SO₄ media for their suitability as redox couples for electrochem. energy storage. The Fe²⁺ complexes undergo a rapid 1-electron **oxidation** at graphite and Pt electrodes to yield Fe³⁺ complexes; these complexes showed varying stabilities depending on the nature of the substituents on the complexes. The Fe²⁺ complexes examined were formed with monodentate, bidentate, or tridentate ligands. The redox couples have a high potential, E₀, value which was a pos. consideration in the storage. Although the aquo Fe²⁺-Fe³⁺ couple has an E₀ less than the complexes, it has a greater promise in terms of storage stability. The kinetics of Fe²⁺ complexation was followed by cyclic voltammetry.
 IT 22452-38-6
 (for redox-flow batteries, properties of)
 RN 22452-38-6 HCAPLUS
 CN Iron(2+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT 14708-99-7 15025-74-8 15053-59-5 15226-33-2 15245-50-8

17455-70-8 18131-30-1 22452-38-6 55290-28-3

79968-89-1 79968-90-4

(for redox-flow batteries, properties of)

L16 ANSWER 29 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1981:543300 HCAPLUS

DOCUMENT NUMBER: 95:143300

TITLE: Characterization of the thermolysis products
of Fe(TPTZ)2Cl2·nH2O and the related
2,4,6-tris(2-pyridyl)-1,3,5-triazine complexes
Zn(TPTZ)Cl2 and Fe(TPTZ)Cl3

AUTHOR(S): Sedney, Diana; Kahjehnassiri, Mina; Reiff,
William Michael

CORPORATE SOURCE: Dep. Chem., Northeastern Univ., Boston, MA,
02115, USA

SOURCE: Inorganic Chemistry (1981), 20(10), 3476-81
CODEN: INOCAJ; ISSN: 0020-1669

DOCUMENT TYPE: Journal

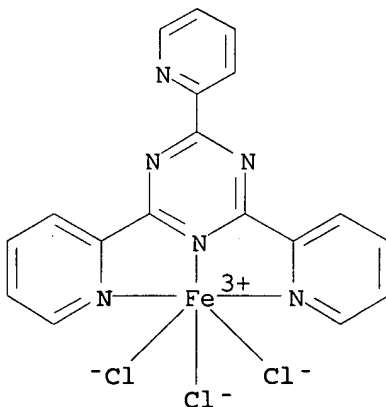
LANGUAGE: English

AB A new five-coordinate ferrous complex, Fe(TPTZ)Cl2 (TPTZ =
2,4,6-tris(2-pyridyl)-1,3,5-triazine) was prepared by thermolysis of
the hydrate of the bis complex. The neat powder form of this
species undergoes a slow, irreversible **oxidation** in the
atmospheric at ambient temperature to the very strongly antiferromagnetically
coupled ferric dimer [Fe(TPTZ)Cl2]2O. These complexes as well as
the related Zn(TPTZ)Cl2 and Fe(TPTZ)Cl3 were characterized by a
variety of phys. methods.

IT 78529-67-6P
(preparation and Moessbauer spectrum of)

RN 78529-67-6 HCAPLUS

CN Iron, trichloro[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-
triazine-κN1]-, (OC-6-21)- (9CI) (CA INDEX NAME)

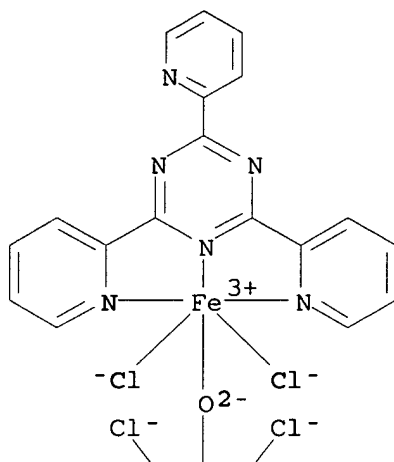


IT 78529-68-7P
(preparation and magnetic properties of)

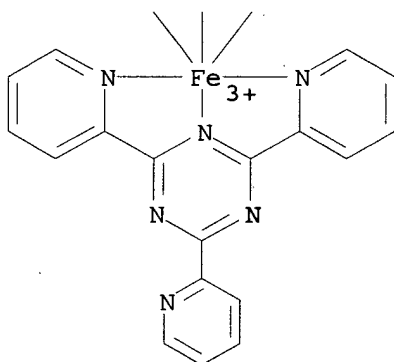
RN 78529-68-7 HCAPLUS

CN Iron, tetrachloro-μ-oxobis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-
N1,N2,N6)di- (9CI) (CA INDEX NAME)

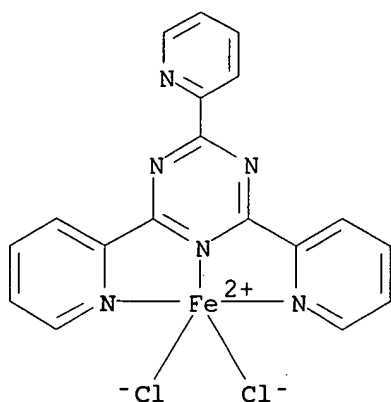
PAGE 1-A



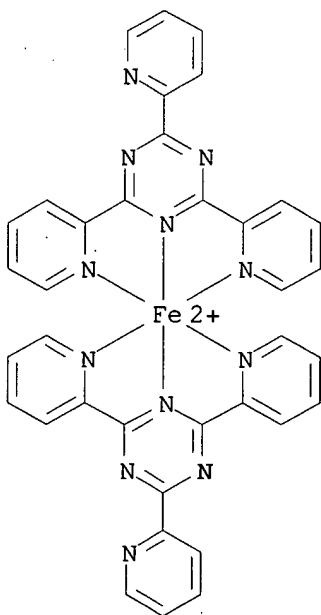
PAGE 2-A



IT 78529-69-8P
 (preparation and oxidation of)
 RN 78529-69-8 HCAPLUS
 CN Iron, dichloro(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-,
 (TB-5-33)-(9CI) (CA INDEX NAME)



IT 78529-70-1
 (thermal decomposition of)
 RN 78529-70-1 HCAPLUS
 CN Iron(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-,
 dichloride, (OC-6-1'2)- (9CI) (CA INDEX NAME)

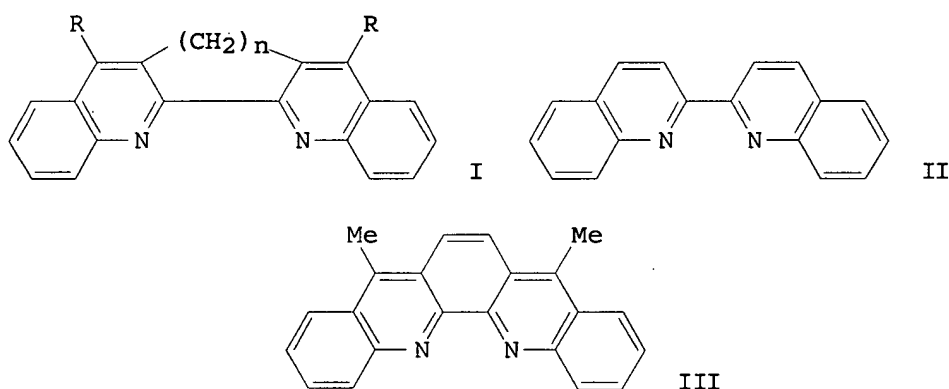


● 2 Cl⁻

CC 78-7 (Inorganic Chemicals and Reactions)
 IT 78529-67-6P
 (preparation and Moessbauer spectrum of)
 IT 78529-68-7P
 (preparation and magnetic properties of)
 IT 78529-69-8P
 (preparation and oxidation of)
 IT 78529-70-1
 (thermal decomposition of)

L16 ANSWER 30 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1981:10534 HCAPLUS

DOCUMENT NUMBER: 94:10534
 TITLE: Synthesis, spectroscopic properties and electrochemical behavior of ruthenium(II) complexes with bidentate nitrogen ligands
 AUTHOR(S): Belser, Peter; Von Zelewsky, Alex
 CORPORATE SOURCE: Inst. Anorg. Chem., Univ. Fribourg, Fribourg, CH-1700, Switz.
 SOURCE: Helvetica Chimica Acta (1980), 63(6), 1675-702
 CODEN: HCACAV; ISSN: 0018-019X
 DOCUMENT TYPE: Journal
 LANGUAGE: German
 GI

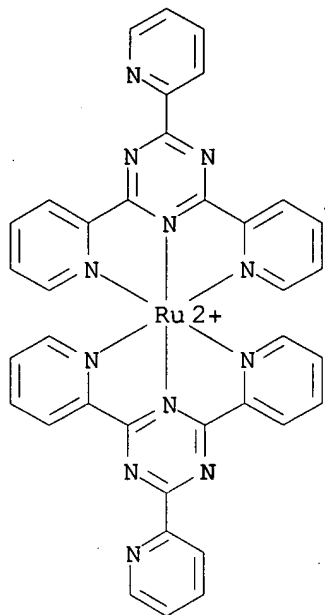


AB [Ru(bipy)3-xLx] (PF6)2 [bipy = 2,2'-bipyridine; L = I (n = 1 or 3, R = Me, Ph; n = 2, R = H, Me, Ph), II, III, 4-nitro-2,2'-bipyridine, 4,4'-dichloro- and 4,4'-di-tert-butyl-2,2'-bipyridine, 2,9-dimethyl- and 4,7-diphenyl-1,10-phenanthroline, 2,4,6-tris(2-pyridyl)-1,3,5-triazine, 2-(phenyliminomethyl)pyridine; x = 0-3] were prepared and characterized by chemical anal., electronic, IR, NMR, and CD spectra, and cyclic voltammetry. The ligands L are related to bipy but differ from it in their π -electron systems. In some ligands, e.g. I (n = 2, R = Me), the 2 halves of the mol. are forced to be nonplanar by the aliphatic bridge between the 2 rings. The properties of the mixed-ligand complexes are compared with those of [Ru(bipy)3]2+; the former show ≥ 1 spin-allowed charge-transfer transitions at longer wavelength than those of the latter. The ground-state oxidation potentials to the 3+ state are little affected by substitution of bipy by L whereas the reduction behavior is strongly affected. The ¹H NMR spectra indicate rigid conformations of some of the nonplanar L ligands in the complexes.

IT 75964-99-7
 (electronic spectrum of, charge-transfer bands in)
 RN 75964-99-7 HCAPLUS
 CN Ruthenium(2+), bis[2,6-di(2-pyridinyl- κ N)-4-(2-pyridinyl)-1,3,5-triazine- κ N1]-, (OC-6-1'2)-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

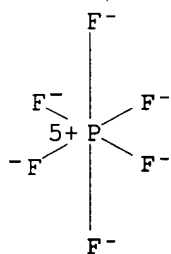
CM 1

CRN 61037-16-9
 CMF C36 H24 N12 Ru
 CCI CCS



CM 2

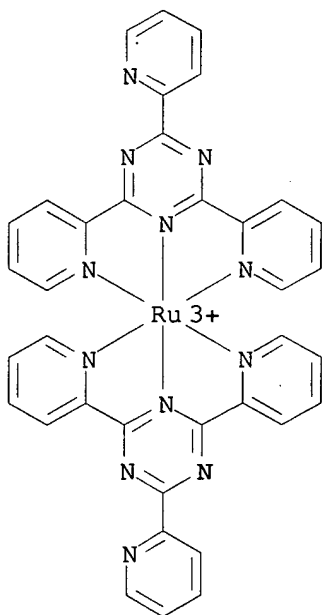
CRN 16919-18-9
 CMF F6 P
 CCI CCS



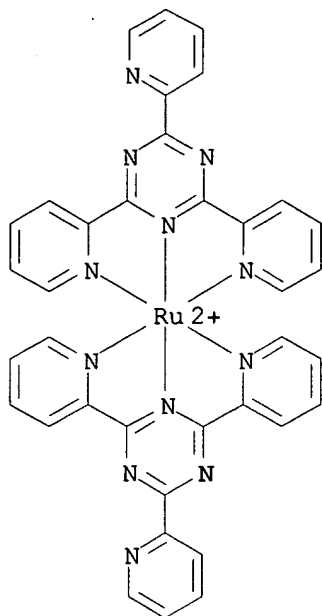
CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 72, 73
 IT 66810-60-4 75964-99-7
 (electronic spectrum of, charge-transfer bands in)

L16 ANSWER 31 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1979:212251 HCAPLUS
 DOCUMENT NUMBER: 90:212251
 TITLE: Semiconductor electrodes. XVII.
 Electrochemical behavior of n- and p-type
 indium phosphide electrodes in acetonitrile

solutions
 AUTHOR(S): Kohl, Paul A.; Bard, Allen J.
 CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA
 SOURCE: Journal of the Electrochemical Society (1979),
 126(4), 598-603
 CODEN: JESOAN; ISSN: 0013-4651
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB The photoelectrochem. behavior of n- and p-InP single-crystal semiconductors was investigated in MeCN solns. which contained various electroactive compds. The cyclic voltammograms of the semiconductors in the dark and illuminated with red light were compared to the Nernstian behavior at a Pt electrode. The extent of photodissoln. of the semiconductors was decreased in MeCN compared to aqueous solns. at similar potentials. Intermediate levels or surface sites located between the conduction band and valence band which mediate electron transfer with solution redox couples are proposed. An undervoltage was developed for the photo assisted oxidns. and redns. with n- and p-InP, resp., and the potential range for photoredns. on p-InP extended neg. of the conduction band edge. The electrochem. behavior and magnitude of the undervoltages is compared to results with InP in aqueous solns. and with other semiconductors in MeCN.
 IT 21791-68-4
 (voltammetry of, on indium phosphide in acetonitrile, illumination effect on)
 RN 21791-68-4 HCAPLUS
 CN Ruthenium(3+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)

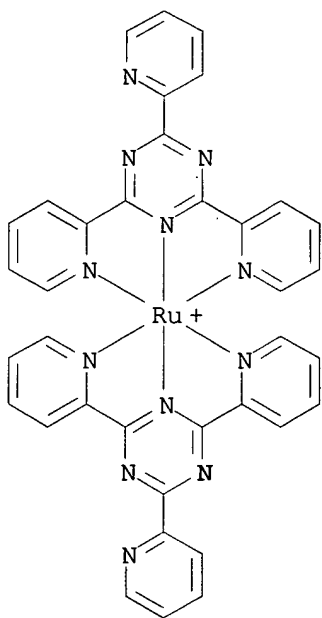


IT 61037-16-9 69666-63-3 69667-97-6
 (voltammetry of, on indium phosphide, illumination effect on)
 RN 61037-16-9 HCAPLUS
 CN Ruthenium(2+), bis(2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



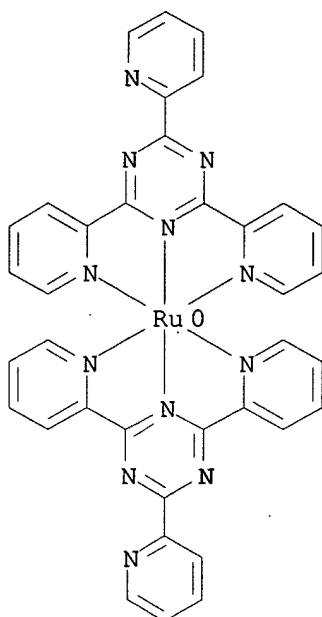
RN 69666-63-3 HCAPLUS

CN Ruthenium(1+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 69667-97-6 HCAPLUS

CN Ruthenium, bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



- CC 72-11 (Electrochemistry)
 Section cross-reference(s): 74, 76
- ST indium phosphide electrode voltammetry light; semiconductive
 indium phosphide electrode; acetonitrile semiconductive indium
 phosphide electrode; redox reaction photoelectrochem indium
 phosphide; redn photoelectrochem indium phosphide; **oxidn**
 photoelectrochem indium phosphate
- IT **Oxidation**, electrochemical
Oxidation, photochemical
 Reduction, electrochemical
 Reduction, photochemical
 (on indium phosphide, in acetonitrile)
- IT 84-65-1 100-22-1 106-51-4, reactions 120-12-7, reactions
 15158-62-0 **21791-68-4** 28351-02-2 34527-55-4
 47367-75-9 62671-94-7
 (voltammetry of, on indium phosphide in acetonitrile,
 illumination effect on)
- IT 3225-29-4, properties 3426-73-1 15158-62-0 34505-64-1
 34509-92-7, reactions 56977-24-3 **61037-16-9**
69666-63-3 69667-97-6
 (voltammetry of, on indium phosphide, illumination effect on)

L16 ANSWER 32 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1979:143507 HCAPLUS

DOCUMENT NUMBER: 90:143507

TITLE: Semiconductor electrodes. XVI. The
 characterization and photoelectrochemical
 behavior of n- and p-gallium arsenide
 electrodes in acetonitrile solutions

AUTHOR(S): Kohl, P. A.; Bard, A. J.

CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA

SOURCE: Journal of the Electrochemical Society (1979),
 126(1), 59-67

CODEN: JESOAN; ISSN: 0013-4651

DOCUMENT TYPE: Journal

LANGUAGE: English

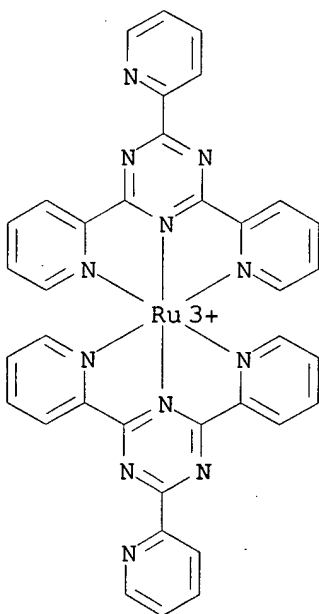
AB The cyclic voltammograms of the semiconductor electrodes in the dark and illuminated with red light are compared to the Nernstian behavior at a Pt disk electrode. The photodissol. of the semiconductors was suppressed and did not occur until potentials well pos. of the flatband potential. An undervoltage(neg. overvoltage) was developed on the photoassisted **oxidation** (n-type semiconductor) and reduction (p-type material) of the solution species. Intermediate levels or surface states are capable of mediating electron transfer and limiting the magnitude of the undervoltage produced. The production of surface films at potentials neg. of the conduction bandedge can produce a photovoltaic effect with the GaAs assisting in the electron transfer. Thus, photoassisted electron transfer with electroactive solution species is observed spanning a potential range >2.5 V utilizing a 1.35 eV photon.

IT 21791-68-4

(reduction of, electrochem. on semiconductive gallium arsenide, illumination effect on)

RN 21791-68-4 HCAPLUS

CN Ruthenium(3+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



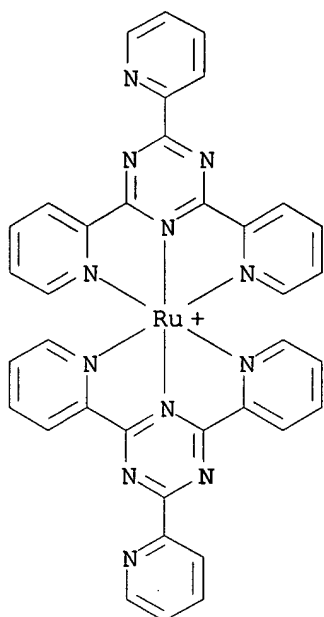
(redn. of, electrochem., on semiconductive gallium arsenide, illumination effect on)

IT 69666-63-3 69667-97-6 69730-33-2

(redox reaction of systems containing, electrochem., on semiconductive gallium arsenide, illumination effect on)

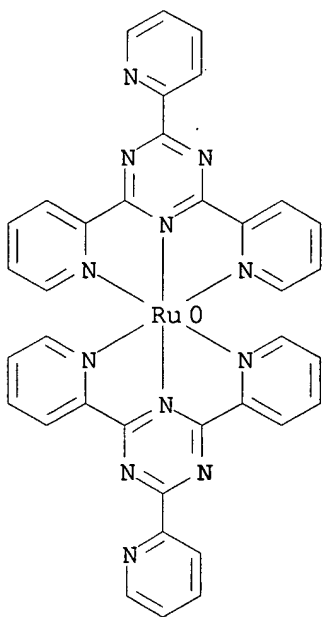
RN 69666-63-3 HCAPLUS

CN Ruthenium(1+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



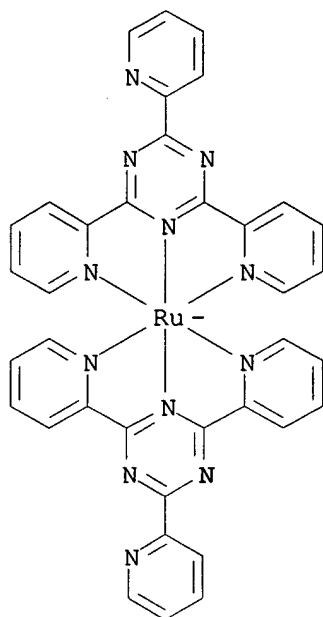
RN 69667-97-6 HCAPLUS

CN Ruthenium, bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



RN 69730-33-2 HCAPLUS

CN Ruthenate(1-), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



- CC 72-11 (Electrochemistry)
 Section cross-reference(s): 74, 76
- IT **Oxidation**, electrochemical
 (of ruthenium complexes and reduced organic compds., on gallium arsenide)
- IT 100-22-1 3225-29-4, reactions 3426-73-1 62671-94-7
 69483-88-1
 (oxidation of, electrochem., on semiconductive gallium arsenide electrodes, illumination effect on)
- IT 34505-64-1 34509-92-7, reactions
 (oxidation of, electrochem., on semiconductive gallium arsenide, illumination effect on)
- IT **21791-68-4**
 (reduction of, electrochem. on semiconductive gallium arsenide, illumination effect on)
- IT 84-65-1 106-51-4, reactions 120-12-7, reactions 15158-62-0
21791-68-4 28351-02-2 34527-55-4 47367-75-9
 (reduction of, electrochem., on semiconductive gallium arsenide, illumination effect on)
- IT 15158-62-0 56977-24-3 **69666-63-3** **69667-97-6**
69730-33-2
 (redox reaction of systems containing, electrochem., on semiconductive gallium arsenide, illumination effect on)

L16 ANSWER 33 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1976:10406 HCAPLUS

DOCUMENT NUMBER: 84:10406

TITLE: Semiconductor electrodes. II.
 Electrochemistry at n-type titanium dioxide electrodes in acetonitrile solutions

AUTHOR(S): Frank, S. N.; Bard, Allen J.

CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA

SOURCE: Journal of the American Chemical Society
 (1975), 97(26), 7427-33

CODEN: JACSAT; ISSN: 0002-7863

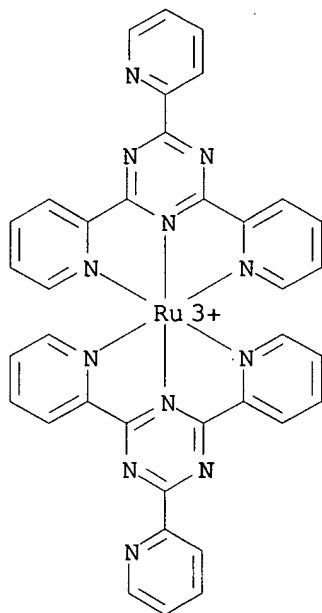
DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The electrode response of single crystal n-type TiO₂ [13463-67-7] in MeCN was investigated with a large number of electroactive compds. differing widely in their standard potentials. The electrochem. behavior of various compds. can be used to investigate the band structure of the semiconductor electrode. This method is useful in detecting intermediate energy levels between the conduction and valence bands capable of mediating electron transfer and in assigning energies to these levels. For TiO₂, at least 1 intermediate energy level was located about 1.2 eV below the conduction band. Polycryst. TiO₂ was shown to respond in a similar fashion, indicating that the intermediate energy level is characteristic of n-type TiO₂. A comparison of the behavior of metal and semiconductor electrodes as a function of the redox potential of various couples and the effect of light on oxidns. at the TiO₂ electrodes is discussed.

IT 21791-68-4
 (redox potential of, at platinum and titanium dioxide electrodes)

RN 21791-68-4 HCAPLUS

CN Ruthenium(3+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 72-7 (Electrochemistry)
 Section cross-reference(s): 76

IT Photovoltaic effect
 (at titanium dioxide electrodes, oxidns. in relation to)

IT 84-65-1 106-51-4, properties 120-12-7, properties 120-46-7
 1499-10-1 18955-01-6 21791-68-4 34507-27-2
 34510-35-5 34527-55-4
 (redox potential of, at platinum and titanium dioxide electrodes)

L16 ANSWER 34 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1973:552272 HCAPLUS

DOCUMENT NUMBER: 79:152272

TITLE: Electrogenenerated chemiluminescence. XIII.
Electrochemical and electrogenerated
chemiluminescence studies of ruthenium
chelates

AUTHOR(S): Tokel-Takvoryan, Nurhan E.; Hemingway, Ronald
E.; Bard, Allen J.

CORPORATE SOURCE: Dep. Chem., Univ. Texas, Austin, TX, USA

SOURCE: Journal of the American Chemical Society
(1973), 95(20), 6582-9

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

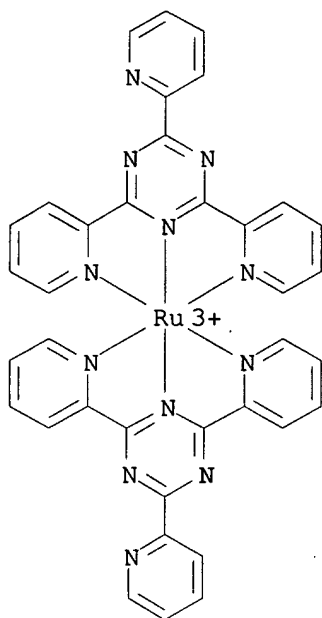
AB The electrochemistry and electrogenerated chemiluminescence (ecl) of 4 Ru(II) chelates, RuL_xn⁺ (x = 3, n = 2, L = 2,2'-bipyridine (bipy); x = 3, n = 2, L = 1,10-phenanthroline (o-phen); x = 2, n = 2, L = 2,2',2''-terpyridine(terpy); x = 2, n = 3, L = 2,4,6-tripyriddy-s-triazine, in MeCN solns. were investigated. All compds. showed evidence of several 1-electron reduction and **oxidation** steps to form products stable during cyclic voltammetric scans. Coulometric and rotating ring-disk electrode (RRDE) studies of the bipy chelate were also carried out. The bipy, o-phen, and terpy chelates produce ecl via redox reactions of oxidized and reduced forms to form an emitting species, which has been identified as the triplet state by comparison to its luminescence spectrum; the ecl of the bipy chelate is the most intense. A study of ecl of the bipy chelate at the RRDE yielded an ecl efficiency of 5-6%.

IT 21791-68-4

(chemiluminescence of, electrogenerated, redox behavior in
relation to)

RN 21791-68-4 HCAPLUS

CN Ruthenium(3+), bis[2,6-di(2-pyridinyl-κN)-4-(2-pyridinyl)-
1,3,5-triazine-κN1]-, (OC-6-1'2)- (9CI) (CA INDEX NAME)



CC 77-12 (Electrochemistry)

Section cross-reference(s): 73

IT 15158-62-0 21791-68-4 22873-66-1 24414-01-5
(chemiluminescence of, electrogenerated, redox behavior in
relation to)

L16 ANSWER 35 OF 35 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1972:41433 HCAPLUS

DOCUMENT NUMBER: 76:41433

TITLE: Synthesis, isolation, and characterization of
some iron(II) complexes with mixed
 α,α' -diimine ligands

AUTHOR(S): Taylor, P. J.; Schilt, A. A.

CORPORATE SOURCE: Chem. Dep., North. Illinois Univ., DeKalb, IL,
USA

SOURCE: Inorganica Chimica Acta (1971), 5(4), 691-7

CODEN: ICHAA3; ISSN: 0020-1693

DOCUMENT TYPE: Journal

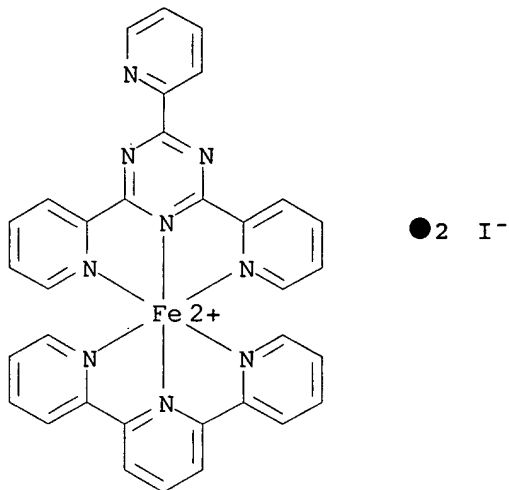
LANGUAGE: English

AB Syntheses are described for mixed ligand complexes of the type
[Fe(hen)n-L3-n]X₂ and [Fe(terpy)(TPTZ)]X₂ (where n=1 or 2,
phen=1,10-phenanthroline, L=methyl-, phenyl-, nitro-, or
chlorosubstituted 1,10-phenanthroline, terpy=2,2',2''-terpyridine,
TPTZ=tris(2-pyridyl)-1,3,5-triazine and X=ClO₄ and I-) and
[Fe(phen)nL3-n'] (where n=2 and L'=4,7-dihydroxy-1,10-
phenanthrolinato, 4,7-diphenyl-1,10-phenanthrolinedisulfonato or
dimethylglyoximato; also where n=1 and L'=4,7-dihydroxy-1,10-
phenanthrolinato, 1,10-phenanthroline-5-sulfonato or phenyl-2-pyridyl
ketoximato). The formal
oxidation-reduction potentials and visible absorption spectra of
these mixed ligand complexes show certain regularities in
comparisons with related unmixed complexes that are of theoretical
interest and practical significance. These are discussed.

IT 35235-48-4P 35260-77-6P
(preparation of)

RN 35235-48-4 HCAPLUS

CN Iron(2+), (2,2':6',2''-terpyridine-N,N',N'') (2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, diiodide (9CI) (CA INDEX NAME)



RN 35260-77-6 HCAPLUS

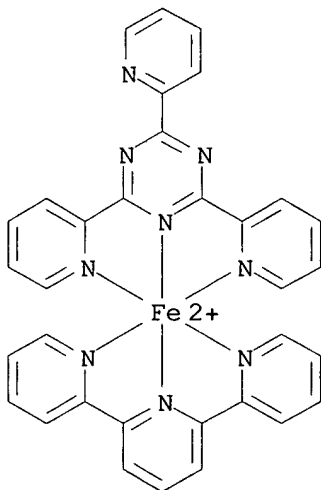
CN Iron(2+), (2,2':6',2''-terpyridine-N,N',N'') (2,4,6-tri-2-pyridinyl-1,3,5-triazine-N1,N2,N6)-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 47838-15-3

CMF C33 H23 Fe N9

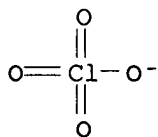
CCI CCS



CM 2

CRN 14797-73-0

CMF Cl O4



CC 78 (Inorganic Chemicals and Reactions)

IT Electric potential

(oxidation-reduction, of iron phenanthroline derivative complexes)

IT	35235-36-0P	35235-37-1P	35235-38-2P	35235-39-3P
	35235-40-6P	35235-41-7P	35235-42-8P	35235-43-9P
	35235-44-0P	35235-45-1P	35235-46-2P	35235-47-3P
	35235-48-4P	35235-49-5P	35235-50-8P	35235-51-9P
	35260-67-4P	35260-68-5P	35260-69-6P	35260-70-9P
	35260-71-0P	35260-72-1P	35260-73-2P	35260-74-3P
	35260-75-4P	35260-76-5P	35260-77-6P	35318-57-1P
	35318-58-2P	35318-59-3P	35318-60-6P	35318-61-7P

(preparation of)